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Volume 202, Number 24 | Domestic $6 per Annum, 25c per Copy Canada $7.04, Foreign $7.56 | JUNE 12, 1930 | Published Weekly in Boston at 165 Newbury Street

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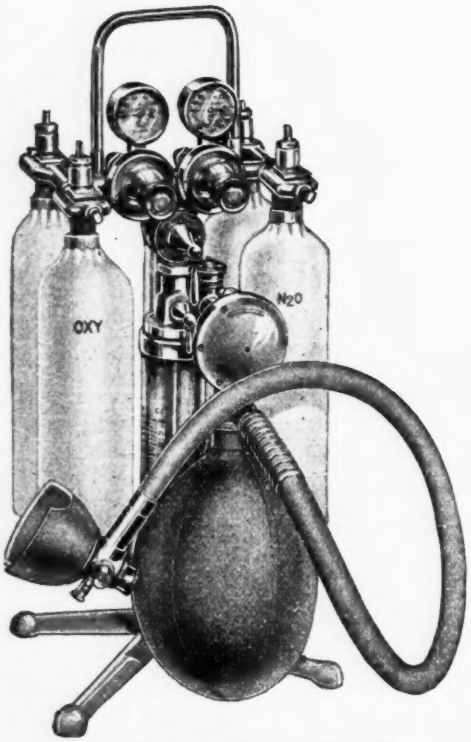

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III

The New England
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THE DIAGNOSIS OF BORDERLINE HYPERTHYROIDISM*

BY HOWARD M. CLUTE, M.D.,† AND HERBERT D. ADAMS, M.D.†

BORDERLINE hyperthyroidism may be defined as a mild or hidden hyperthyroidism in which the history is indefinite, the symptoms atypical and the basal metabolic rate generally below +30. Experience shows that the disease in this form is frequently present for long periods, unsuspected and undiagnosed. Even more common, however, is the tendency to suspect the thyroid gland of dysfunction in any complaint which is marked by "nervousness" or palpitation and tachycardia.

In this paper we wish, first, to present the significant features in the history, the symptoms and the clinical examination on which we have depended when making the diagnosis of "borderline hyperthyroidism". Secondly, we wish to differentiate those diseases which most frequently simulate borderline hyperthyroidism; and lastly, we wish to analyze the results of thyroidectomy in patients so diagnosed.

For the purposes outlined above we have reviewed the records of 347 consecutive cases of hyperthyroidism in which a thyroidectomy was performed when the first basal metabolic rate was +30 or less. Of these patients 181 were known to have taken iodine, before we examined them, in amount doubtless sufficient to reduce their basal metabolic rates to a low figure and were, therefore, excluded from this study. Of the remaining cases 97 were excluded either because the diagnosis at operation was not exophthalmic goitre, the record was too unsatisfactory to be used, or the patient was so recently operated upon that there was available less than a year's postoperative study. There were, therefore, in this group of 347 cases, 69 which could be selected for the present study.

These 69 cases represented problems in the diagnosis of borderline hyperthyroidism. As far as we know, none of these patients had received iodine before our observation. In each case the basal metabolic rate was below +30 and in 20% of the cases it was within so-called normal limits (±15). All of these patients had been subjected to thyroidectomy for their hyperthyroidism and were followed after operation at three-month intervals for at least a year, with metabolism tests and clinical studies.

The history which the patient gives in mild hyperthyroidism is usually very vague. The onset of the symptoms is insidious and the exact time that the illness began cannot be determined. In certain cases the illness will be said to date back several years, with more or less constant poor health, marked by one or more so-called "nervous breakdowns". Nervousness is usually the chief complaint and this symptom is most difficult to analyze. "Nervousness" in certain people implies shakiness of the hands and tremulousness of the body. In most cases, however, "nervousness" is applied to a state of mental unrest and uneasiness and inward activation. Not infrequently in hyperthyroidism the patient will declare that she has always been "nervous" but that recently there has developed a new and unusual mental state which is recognized by both the patient and her family as entirely different from her previous condition. The patient with true hyperthyroidism is usually optimistic and hopeful of the future. She is not readily convinced that she is ill and even though she may be nearly incapacitated, she will persist in saying that she feels fine, and that she is perfectly able to carry on with her work. Often, however, the mental attitude is one of marked instability, in which the patient passes frequently from laughter into tears without adequate cause. In many cases marked irritability and inability to adjust herself to the usual routine of life develop in a patient who was previously amiable and mentally at ease and thus may become significant of mild hyperthyroidism.

The other type of "nervousness", in which there is a marked tremor of the hands and occasionally of the arms and legs is less commonly a leading symptom of the disease but still is very often noted. Occasionally the tremor and shakiness will be said to be present not only in the extremities but also inside the body. Palpitation in certain instances is the chief difficulty of which the patient complains and is the reason for her seeking medical assistance. This palpitation comes on at any time of day and occasionally keeps the patient awake at night. It is not always related in its onset to exertion or excitement or fright and often comes on when the patient is sitting quietly in a chair.

Increased fatiguability is a frequent complaint in mild hyperthyroidism. Patients state that although they are very anxious to do their usual work, they cannot carry it to its usual conclusion because they become so inordinately

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tired, with even a small amount of exertion. This is a very important detail and the statement that the leg muscles have become extremely weak and that it is now very difficult to go upstairs should attract close attention. Quadriceps weakness is a well-known symptom in hyperthyroidism and in obscure or hidden cases of this disease it may be one of the early and outstanding points which will direct attention to the true diagnosis.

In borderline hyperthyroidism marked increase of the appetite has not impressed us as being particularly common, but a good appetite is retained. In many instances the menstrual periods become distinctly diminished within the recent months in which the illness has become more pronounced. A diminution in the amount of flow without any alteration in the frequency of the periods is very suggestive of hyperthyroidism when it is associated with other evidences of the disease.

The history frequently shows that the patient has recently been feeling increasingly warm and has found it more and more uncomfortable in a room temperature which other people find quite satisfactory. Associated with this increased sense of body heat is a marked increase in perspiration, which the patient will state has never before been present. Unaccountable hot flushes over the upper chest and in the face and neck are also seen in some instances.

Variation in weight of a few pounds per year occur; in general, the tendency over a period of months is for the patient to become increasingly thin. There is rarely, however, any history of sudden and serious weight loss such as is so commonly seen in severe hyperthyroidism.

The physical examination in suspected borderline hyperthyroidism will, in many instances, be most unsatisfactory because of the paucity of positive findings. Very often it will be necessary to see a patient of this type at repeated intervals and to review all the points in his history with great care before one can hope to reach a final decision. All too often we find that the diagnosis in a borderline case is finally dependent upon the impression of the examiner. This method, however, is notoriously inaccurate and every endeavor must always be made to establish the diagnosis on the basis of known facts.

Cases of severe hyperthyroidism are usually diagnosed at the first examination. In the typical case the wide, staring, bright eyes, the active, pulsating goitre, the marked tremor, the general activation and the rapid pounding heart, either as single symptoms or in some combination, make the diagnosis relatively simple. The examination in borderline hyperthyroidism, however, not infrequently leaves the physician in a complete quandary as to the true situation.

In over 50% of our cases there was no goitre present. It, of course, must be recognized that any enlargement of the thyroid gland is called a goitre and that what constitutes an enlargement is so decidedly a matter of personal opinion that hard and fast lines cannot be drawn. However, in this group of 69 patients, 30 had a goitre, while 39 had no appreciable enlargement of the thyroid gland, and in no case of this group had any large goitre been present. In most patients, the thyroid gland was small in size, with pointed poles, firm and hyperplastic in consistency. Only rarely has a bruit or thrill been detected in these cases, though we consider these very significant when present. Small adenomatous changes are occasionally to be felt, but have not been outstanding, and no large adenomatous nodules were present in any of these cases. When a goitre is present, the possible presence of hyperthyroidism is often suggested early in the course of the patient's illness. Our experience shows that one is too often led into making the diagnosis of hyperthyroidism in a doubtful case just as soon as the presence of any kind of thyroid enlargement is discovered. To be significant of hyperthyroidism, the goitre must be typically hyperplastic in type and not of the colloid variety so often seen in neurotic young women.

Eye signs may or may not be present in mild hyperthyroidism. The most common eye signs which we see are not exophthalmos but simply stare with, perhaps, a slight widening of the lid slits, fixation of the eyes and, in certain cases, definite lid-lag. This peculiar startled look which is so commonly seen in certain cases of severe thyroidism is quite significant when present in the borderline case. In nervous women who are intensely startled by the thought of having a goitre or some other disease, and in whom the examination causes great mental excitement and fear, slight widening of space between the lids and marked dilation of the pupils occur. This frightened appearance need not be confused with the stare of hyperthyroidism since it disappears after a few words of reassurance.

The presence of marked tachycardia, a pulse rate at least 90 to the minute and above, does not prove that hyperthyroidism is present. On the other hand, one almost never sees true hyperthyroidism, even of the mild or borderline type, without a definite tachycardia; it is constant and persistent and does not diminish in rate to any great degree. Auscultation of the heart reveals, in the mildly thyrotoxic patient, a marked pounding of the first sound. There is an unusual forcefulness and hyperactivity to the sound, which is suggestive of the more accentuated findings of the same type seen in cases of severe hyperthyroidism. In borderline hyperthyroidism the pulse rate is accelerated with mild stimulation and the resting pulse rate is constantly at a high level and does not stay within normal limits. Very commonly the range between the systolic and the diastolic blood pressure is wide. The pulse pressure is high and the diastolic blood pressure is normal or subnormal.

A warm, moist skin is commonly present. This

finding is quite constant and when associated with other significant facts is of help in confirming the diagnosis.

When the basal metabolic rate is below +30 and borderline hyperthyroidism is suspected, it is generally accepted that repeated estimations of the metabolism under truly basal conditions must be made before any significance can be attached to the findings. It is not necessary at this time to discuss the slight elevation of the basal metabolic rate which is seen in nervous patients who cannot at first adjust themselves to the apparatus and whose tests must either be repeated or else entirely disregarded. It is important, however, to insist again that the utmost care be established in the technique of the metabolism tests. Little errors in technique committed by technicians, or by patients, rapidly creep in unless constant watchfulness is employed. We still prefer that patients who are to have the test shall spend the night in bed in the hospital before the test in order that we may be certain that basal conditions are present.

It is well known that a very definite, though slight, elevation of the metabolism is commonly seen in patients who are taking the test for the first time. When such patients are distinctly neurotic, it is only natural that the reading shall be registered somewhat above its true level until the patient has become acclimated to the procedure and to the apparatus. That mild hyperthyroidism with a relatively low basal metabolic rate does occur, however, we are now convinced. Whether, as had been suggested by Thompson & Thompson[1] and others, the true basal metabolic rate in these cases is below the usual normal figure and hence a moderate elevation above this level causes symptoms of hyperthyroidism to occur is not known. It is undoubtedly true, however, that many people constantly carry a basal metabolic rate which is always from —15 to —18 and yet have no symptoms whatsoever of myxedema. It is also true that many excellent clinical results were obtained in these patients whose metabolism, a year after thyroidectomy, was well below the average normal figure.

Careful examination of the foregoing material makes it obvious that the diagnosis of borderline hyperthyroidism will be suggested by many points in both the history and examination and settled by no single detail. Noticeable changes in the mental state of an individual with the presence of increasing irritability and tendency to worry; marked changes in the amount of flow at the menstrual periods; a history of loss of weight with a normal or increased food intake over some little time, all point to possible hyperthyroidism. The finding on examination of a goitre which is symmetrically enlarged and hyperplastic with high pointed poles and pulsation is most suggestive that the diagnosis is correct, but the absence of a goitre by no means rules out hyperthyroidism. A tachycardia of 90 or more beats to the minute is almost invariably present in hyperthyroidism. Rarely, if ever, in our experience has true hyperthyroidism, untreated by iodine, been present without a resting pulse rate of 90 or more and we would be very hesitant to diagnose hyperthyroidism in the absence of this particular finding. Marked quadriceps weakness and a warm moist skin are nearly always present in true hyperthyroidism and complete the diagnostic picture necessary in borderline cases. When, with all or most of these findings, we find a persistent, though slight, elevation of the basal metabolic rate, we may feel quite certain that real hyperthyroidism is present.

No problem is more frequently encountered for diagnosis than that presented by the patient suspected of hyperthyroidism and treated with iodine, before he is examined. It was necessary to discard 181 cases of the 347 from this study because they had taken sufficient iodine to conceal the true state of their thyroid activity. When the patient has been taking iodine for some time, it is our experience that some of the significant findings on which the diagnosis of hyperthyroidism is made will be present, but the vast majority may well be absent. Under these conditions, we feel that the diagnosis of this disease must be withheld. It may well be that the patient has had hyperthyroidism and is in an iodine remission of the disease, but without the majority of the above findings being present, we do not feel that the diagnosis can be faithfully made and properly justified.

Readily confused with borderline hyperthyroidism, and oftentimes separated from it with great difficulty, are certain conditions which are of much more common occurrence. In our experience, the most common disease to simulate borderline hyperthyroidism is, so-called, neurasthenia or neurocirculatory asthenia. The differentiation of the neurasthenic person from the patient with hyperthyroidism can be made, in many instances, by careful study of the patient's mental reaction alone. The constant complaining, the pessimistic viewpoint, the general depression of the neurasthenic differs so markedly from the optimism, the buoyancy and the stimulated mental attitude of the true hyperthyroid patient that often this alone will make a true diagnosis. The neurasthenic, with her fear of crowds, her certainty that she will suffocate if she is in a closed place, and her protracted and needless worry over imaginary things, differs most completely from the patient with hyperthyroidism. Furthermore, the well-nourished and healthy appearance of the neurasthenic woman conflicts so markedly with her long story of illness extending over many years that this confirms the examiner's impression that no thyroid disease is present. In certain young women a colloid goitre may be present and have associated with it many symptoms of neurotic origin. Here the separation of the case of true

mild hyperthyroidism from that in which there is a colloid goitre and neurasthenia is often extremely difficult. In these patients the correct diagnosis will frequently depend entirely upon the fact that the basal metabolic rate is usually not elevated to any degree in repeated tests, and upon the fact that there is a preponderance of the symptoms which one associates particularly with neurasthenia, rather than with hyperthyroidism. Usually a careful history will disclose the fact that fatigue may well explain all the difficulties which are present. Not infrequently women will be found who have been married but a few years and in this time have had several babies, one or two operations, have done all their own work and taken care of the children. Recently they have become nervous and shaky and have noticed that their heart was rapid and pounding. All of these symptoms may well be due to the nervousness and tremor which comes with exhaustion, fatigue and worry. In most of these patients it is not even necessary to do a basal metabolism estimation to establish the absence of hyperthyroidism.

When the basal metabolic rate is constantly somewhat elevated in doubtful cases which do not seem thyrotoxic, careful blood examinations should be made as a routine, since it is now well known that the basal metabolism rate is at times elevated in polycythemia, in leukemia and in cardiorenal disease.

In certain types of heart disease, particularly rheumatic heart disease with mitral stenosis, certain symptoms are commonly associated which suggest very definitely that hyperthyroidism is present. For example, shortness of breath, increased fatiguability, nervousness, and palpitation are all commonly found in the patient with true heart disease. The discovery of the actual cardiac lesion and the absence of significant weight changes, of a warm moist skin, of menstrual changes and of a hyperplastic thyroid gland make the correct diagnosis quite readily possible. It is, however, very essential that if true rheumatic heart disease be present, every effort shall be made to discover any hyperthyroidism, since the removal of thyroid toxicity in rheumatic heart disease is so essential in preventing the subsequent development of a thyrocardiac.

Hypertension is one of the most common causes for slight and persistent elevation of the basal metabolic rate and, furthermore, it is so frequently accompanied by certain neurotic symptoms, such as so-called "nervousness", shakiness and pounding of heart, that patients suffering from hypertension are not infrequently suspected of hyperthyroidism. The diagnosis of mild hyperthyroidism, therefore, in the patient who has a marked elevation in blood pressure must be definitely guarded since in these patients the metabolic rate is often elevated well above normal. In certain cases, the final diagnosis between mild hyperthyroidism and severe hypertension cannot be settled until some period of observation has passed. If the hypertension is obviously severe and if the symptoms of hyperthyroidism are obviously vague, the probability is that most of the symptoms are due to hypertension and that the hyperthyroidism may well rest untreated until more positive findings can be discovered.

The treatment of borderline hyperthyroidism is dependent, first, upon the certainty with which the diagnosis in the individual case is made. If the patient has been taking iodine for some little time and has noted that the condition has definitely improved following this therapy, it may well be that she has a mild hyperthyroidism with an iodine remission. Such patients should have no active treatment directed toward their hyperthyroidism but should be at once informed that it is not possible to make a positive diagnosis in view of the iodine medication which they have been taking. It is our custom in these cases to insist that they shall return to their homes and go for an interval of at least six weeks, and probably two months or more, without taking medicine of any kind. They then return to the clinic for further examination and decision as to whether true hyperthyroidism is present.

When such a doubtful case is sent home to wait until the question of an iodine remission can be settled by an interval without treatment, it is our custom to insist that she shall return to full duty and attempt to put out of her mind the possibility of any thyroid trouble being present. If the patient has no hyperthyroidism, she should be able to return to full duty and carry on her work as she desires, with only moderate changes in her hours and her periods of rest. No diagnostic aid, in our opinion, is likely to result from an interval of six or eight weeks without iodine, if it is spent in bed or with very limited activity.

In the past, we have tended to operate upon patients whom we suspected of being in an iodine remission and in this group of patients have come some of our bad results and myxedemas. We now have the feeling very definitely that until the patient can prove by his symptoms and his examination that mild hyperthyroidism is present, we should undertake no radical measures of treatment. The burden of proof must constantly remain on the shoulders of the patient. Surgery should be distinctly and unhesitatingly avoided in those cases until the diagnosis can be very definitely and very positively made.

In all cases suspected of borderline hyperthyroidism the possibility of early pregnancy, diabetes, pulmonary tuberculosis, etc., must be thoroughly ruled out by careful general examination and laboratory studies.

In cases in which the disease has been positively diagnosed, it is our belief that subtotal thyroidectomy should be performed. We have repeatedly seen patients who were suspected of mild hyperthyroidism and were treated with io-

dine, rest in bed, or limitation of their activities. If true hyperthyroidism is present, these measures not only do not cure the patient but they markedly prolong his period of disability. Furthermore, in other cases x-ray treatment has been given for long periods of time and we have seen patients under these circumstances with a basal metabolic rate which was normal who yet were suffering from some definite symptoms related to their hyperplastic thyroid gland. Only after thyroidectomy were they able to return to a normal, comfortable state of living.

The actual technique of thyroidectomy in borderline hyperthyroidism differs in no essential feature from the technique of the operation in the more severe degrees of this disease. It is true, however, that when the thyroid gland is not enlarged, thyroidectomy is a more delicate technical procedure.

The results of thyroidectomy, in this group of sixty-nine cases in which mild hyperthyroidism was diagnosed and thyroidectomy performed, were most satisfactory in 58 cases. There were, however, 11 patients who were distinctly not improved after the operation. It is almost certainly true that in these patients the diagnosis of mild hyperthyroidism which we made was wrong and, as is usually the case, thyroidectomy not only failed to cure them of their trouble but also added very distinctly to the unfortunate train of symptoms of which they complained. It is doubtless significant that 7 of the bad results occurred in persons who had goitres and only four occurred when no goitre was present.

In 10 of the cases classed as good results, myxedema or borderline myxedema developed after operation. In all of these cases this was controlled by the administration of small amounts of thyroid extract and, in our opinion, the patients were distinctly better, in spite of this complication, than they had been before the operation was undertaken. Adequately treated myxedema, when it replaces hyperthyroidism, is generally well borne by the patient. In four of these 10 cases no true myxedema was present but only a low basal metabolic rate. Thyroid extract was given therapeutic trial in these patients and, since it failed to produce any benefits, was omitted. It is particularly interesting to note that in 9 of the 10 possible myxedema cases the patients had had no marked thyroid enlargement at operation.

Of the 58 patients in the group of 69, whose symptoms disappeared following thyroidectomy for borderline hyperthyroidism, the basal metabolic rate became lower and the weight increased at the interval examinations following thyroidectomy. In the studies made a year after operation in these 58 cases, the metabolic rate was below +7 in every case and in all save 10 patients was below +0. In the 11 patients who were not cured by the thyroidectomy, and who never had had hyperthyroidism, there was neither any marked gain in weight nor significant lowering of the basal metabolic rate.

CONCLUSIONS

1. Of the 69 patients on whom a diagnosis of borderline hyperthyroidism was made and who were subjected to thyroidectomy, 58 (85%) were freed of their symptoms. In 11 patients (14+%) no improvement followed operation.
2. Analysis of the 11 failures shows that in each case probably no hyperthyroidism was present at the time of operation.
3. Persisting postoperative myxedema occurred in 6 cases but with treatment these patients are free from any troublesome symptoms.
4. When hyperthyroidism is definitely proven in borderline cases, thyroidectomy is indicated and will be of marked benefit.
5. In questionable hyperthyroidism no thyroidectomy should be undertaken until long observation renders the diagnosis positive.

REFERENCE

1 Thompson, W. O. and Thompson, P. K.: Significance of low basal metabolism rate following thyrotoxicosis. Am. J. Surg., 7:48-54, July 1929.

THE 1930 TYPE OF POLYNEURITIS

BY BENJAMIN T. BURLEY, M.D.†

UNTIL recently it has been evident to neurologists that toxic or multiple neuritis has become gradually a very rare disease, very much less common for instance than multiple sclerosis or combined system disease which accompanies pernicious anemia. The rarity of such toxic neuritis has probably been largely due to two factors: (1) The greater precautions in industry and personal hygiene against such agents as lead and arsenic and (2) the changed character of alcoholic beverages which in addicts now seem to cause less peripheral neuritis and more gastric or varied symptomatology.

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Within two or three months, however, several sections of the country have been suffering from an epidemic form of polyneuritis which is disastrous in its results, obscure in origin and clinically is apparently a new type of toxic polyneuritis.

The study of this new symptom complex as presented in fifty-five cases now under observation, chiefly at the Worcester City Hospital, is the purpose of this paper.

The first cases to occur in Worcester began to appear early in April, though the distribution of the poison in this area apparently took place the latter part of March. If the general evidence given by the patients is correct the

paralysis generally followed, in from four days to over two weeks, the ingestion of one or more 2 oz. bottles of a fluid marked Jamaica Ginger. In some instances, however, the use of Jamaica Ginger was denied.

The onset of the condition was occasionally marked by mild gastric disturbance but usually the first change noted was a peculiar paresthesia of the legs, a sense of coldness, tingling or muscular fatigue in the calf or anterior surface of the lower leg. This subjective sensory disturbance lasted but about a day and was followed promptly in every instance by motor paralysis of the anterior tibial group in both legs, although the paralysis of one leg might precede that of the other by a day or two. With the motor paralysis of the legs causing toe-drop came marked ataxia, in fact the ataxia is one of the great causes of incapacity in these cases.

If the case were very mild the paralysis might not involve the upper limbs but in all severe cases there follows in about a week after the foot drop a paralysis involving the hands and wrists similar in type to the foot involvement. The intrinsic muscles of the hands and the extensor muscles of the forearm are particularly affected.

A change in electrical reaction follows in the paralyzed muscles, the reaction of degeneration being definite in all severe cases thus giving us some criterion as to the severity of the nerve-end damage. Vasomotor changes in the affected parts are frequent, sweating often being profuse in the extremities for the first 2-3 weeks. Mottling, cyanosis and lowered local temperature usually occur. Sensory changes, *per se*, however, are characteristically absent in the 1930 type of polyneuritis. There are occasionally minor changes in vibratory or deep muscle senses but pain, temperature and tactile conduction is intact. Tenderness to deep pressure over the calf muscles is frequent in the second and third week of the paralysis but there is no objective paresthesia as in alcoholic neuritis.

The reflex responses in these cases are of great importance. The Achilles and plantar reflexes are lost, the knee jerk is present. There is increased mechanical irritability in the paralyzed muscles. The wrist jerk may be impaired in severe cases. Atrophy gradually occurs in the affected muscles and is especially evident in the interossei of the hands.

In general the rest of the body except the limbs escapes the lasting effects of the poison. The cranial nerves are intact, the organs of the body show no evidence of lesion. The kidneys evidently have rapidly excreted the poisonous element after it has done its selective work. The result of this work is a bilateral paraplegia or quadriplegia, purely motor and profoundly disabling.

In no case under observation has there been evidence of mental disease such as occurs with chronic alcoholism.

In the Worcester City Hospital group of over fifty cases there have been no children and the proportion of men over women has been nine to one. The majority of the victims bear foreign names and belong to the group of moderate users of alcohol in their homes. Only a small number presented the physical signs of chronic alcoholism. One or two cases reported taking only a small quantity from a Jamaica Ginger bottle for a cough or toothache. Yet they had a severe quadriplegia.

LABORATORY FINDINGS

In order to find any pathology which might suggest the etiological agent, the following tests were done on twenty polyneuritis patients: white and red blood count, hemoglobin determination, Schilling differential count, search for stippling, reticulocyte count, sedimentation rate, Wassermann reaction, Hinton reaction, Kahn reaction, routine urine.

Two patients showed positive Kahn and Hinton tests, and one of these two had a positive Wassermann. These two patients also had an increased sedimentation rate, the blood cells dropping to 24 mm. in 39 and 58 minutes. One other patient had an increased sedimentation rate, dropping 24 mm. in 21 minutes.

In the urine one patient had red blood cells, five had white blood cells, eight had albumin and two had transient sugar. Three urines examined for lead were negative.

Two spinal fluids showed the following:

Cell count	Albumin	Globulin	Wassermann	Colloidal Gold
1	+	+	Negative	Negative
1	+	+	Negative	Negative

Two rabbits each given one gram of urine residue of one of the patients have shown no evidence of paralysis after five weeks.

The prognosis in these cases is more difficult than the diagnosis chiefly because the symptomatology presents a novel type of polyneuritis. It may be deduced, however, that recovery will be slow, months rather than weeks because the motor nerve endings are traumatized enough to cause a reaction of degeneration.

Treatment resolves itself largely into the matter of after-care, since the damage has been done before the cases have been seen and no antidote for the poison can then be applied. In a few early cases sodium thiosulphate was given intravenously on empirical grounds but no effect was noted upon the paralysis. It is important to furnish a favorable position for the affected muscles by props or splints so lightly applied that the impaired circulation may not be further hampered. Later, massage and application of the galvanic current to the muscles showing a reaction of degeneration are indicated.

Several of our early cases were referred as being caused by industrial accidents thus reminding us that neurologic diseases are fre-

quently mistaken for other conditions. One case in particular might be cited:

CASE—L

This patient, male, 40 years old, married, gave a family history entirely negative. He stated that he drank only moderately, chiefly in his home but admitted taking some mixed drinks and some Jamaica Ginger during the latter part of March. His past history revealed that he had an attack of influenza in 1919 but otherwise he had been well.

Three months ago, while working in a factory he was hit on the head by a piece of steel. This caused a wound which was dressed at the shop hospital. He is said to have been somewhat dazed at the time of this accident and remained at his home for the following three days complaining of dizziness. He stated that he works a great deal of the time standing upon a ladder and he believed this to be the cause of a weakness of the legs which began about the first of April. On March thirty-first he noticed a paresthesia and sensation of coldness in his legs. The following day double toe-drop developed and he staggered when he tried to walk. He states that he had to give up his work and one week later noticed some weakness of his hands. He had difficulty in buttoning his clothes and had a moderate wrist-drop. There had been no improvement in the paralysis up to April 12 when he was examined.

Physical examination:

This patient is of medium stature. Color is rather pale. He presents none of the signs of chronic alcoholism. He walks with great difficulty with a high-stepping, waddling, ataxic gait. Weakness of the hands and wrists is apparent from their position. The scalp shows a slight scar in the left parietal region with no skull depression. Pupils are equal and react normally to light and in accommodation. The fundus is clear. All other cranial nerves are intact. Both hands show weak grasp registering zero on the dynamometer. Extensors of the arms also are weak. There is profuse perspiration, especially of the palms. Chest and abdomen are normal. Both legs show toe-drop with moderate cyanosis. Mechanical irritability is increased especially in the anterior tibial group of muscles which are paralyzed. Knee jerks are active. Ankle and plantar reflexes are lost. All sensory reactions are normal except vibratory sense in lower leg. Marked Romberg is present and incoördination in use of the legs.

Spinal fluid examination gives negative serology and no increased cell count. Blood and urine examinations are also negative.

The clinical entity before us is unusually clean-cut and adaptable to a differential diagnosis and it may be of value to mention briefly some of the conditions to be differentiated. First, other forms of polyneuritis, it being understood at once that a mononeuritis arises from other causes and should not be confusing.

(1) Alcohol.

Formerly a more common form of polyneuritis coming on slowly with marked sensory changes and painful conditions affecting especially the feet. The general symptoms of chronic alcoholism are usually present and not infrequently marked mental symptoms occur as in Korsakoff's syndrome.

(2) Lead.

Also slow in onset, usually accompanied by constipation, colic and severe anaemia. The lead line appears on the teeth and stippling in the blood. The palsy is selective, first appearing in the arms whereas the present polyneuritis invariably appears first in the lower legs.

(3) Arsenic.

Polyneuritis occurs only in chronic cases with slow onset, respiratory disturbances and marked sensory symptoms. Sweating and later pigmentation with skin eruptions are the rule. In some cases blindness has occurred.

(4) Other agents such as carbon monoxide, carbon bisulphide, phosphorus, mercury and other metals may rarely cause polyneuritis but none of them cause the pure type of motor paralysis present in our cases.

(5) Infectious diseases, particularly diphtheria and influenza may be complicated by palsies or even polyneuritis but the distribution of the palsy and the presence of initial fever should fix the differential diagnosis.

To differentiate other neurologic diseases we may discuss:

(1) Tabes dorsalis.

A posterior tract spinal cord disease causing lost knee jerk and ataxia without typical toe-drop of sudden onset. Physical signs often affecting the cranial nerves. Frequently gastric crises and nerve root pains. A pathological spinal fluid especially as regards the Wassermann and colloidal gold.

(2) Multiple sclerosis.

Typically a spastic paraplegia of slow onset in young people without bilateral toe-drop and ataxic gait. Further symptoms to be observed are intention tremor, scanning speech, pale temporal discs, absent abdominal reflexes and lively lower reflexes.

(3) Combined System Disease of the Spinal Cord.

Occurring chiefly in pernicious anaemia. Here we are dealing with a lateral and posterior tract lesion, not a peripheral neuritis. Sensory changes are always present rather than rapid toe-drop, the muscular weakness is more generalized and anaemia with a more or less typical blood picture may be found.

(4) Rarely a severe occupational neuritis may cause considerable weakness in the extremities but it is rarely bilateral and is accompanied by sensory disturbances and painful reactions to use or pressure and the muscles do not typically give a reaction of degeneration.

(5) Transverse Myelitis.

Transverse myelitis will of course cause a bilateral paraplegia of rapid onset but sensory loss is usually as complete as the motor, the sphincters are involved and the knee jerks suffer as well as the ankle jerks.

(6) Anterior poliomyelitis.

Anterior poliomyelitis might mislead if of paraplegic type but a more complete examina-

tion would show the knee jerk lost and some spinal fluid changes early. The paralysis in these cases is usually irregular or crossed, not resembling a peripheral type. Moreover, the usual age of incidence and the prodromal pyrexia are distinct from polyneuritis.

The exact etiological factor in this paralysis has thus far escaped identification. Almost invariably the victims had taken steps to destroy rather than retain the evidence. Apparently, however, the distribution was in small quantities and evidently those who were handling the adulteration in bulk were favored by delays incident either to the failure of those in authority to take action in what purported to be a food product or by the failure of some authorities to realize the amount of damage being done.

From our observation it is clear that, whatever name may later be given to the toxic agent which temporarily might be designated adulterant "X", it is a most potent selective damager of motor nerve ends. Its action is evidently clinically identical all over the country and when the final chapter has been written tabulating the thousands of scattered cases coming on almost simultaneously from an unknown cause it will constitute one of the strangest pages in recent medical history.

Grateful acknowledgment is made to Dr. Raymond H. Goodale, Resident Pathologist at Worcester City Hospital, for his coöperation and report of laboratory findings.

RECONSTRUCTION OF ELBOW AND BONE GRAFT OF RUDIMENTARY ULNA

BY LOUIS A. O. GODDU, M.D.*

TO the writer one of the most interesting features of all congenital deformities has always been the manner in which they may or may not affect the present and future of the individuals concerned. The writer has been privileged to come in contact with the case about to be described. In order to present the varying aspects, the human feelings, together with the actual surgical procedures, it would be necessary, in a way, that the two become more or less disassociated, although intimately interwoven.

PLATE NO. 1 shows the rudimentary ulna attached at elbow, but not attached at wrist. It also shows the radius attached at the wrist but not attached at elbow but curved and wound around the humerus.

One of the main objects of this paper is, not so much to present a rather interesting congenital deformity and the apparent successful surgical procedure, but to bring to the attention of the surgeons in general what seems to the writer one of the most essential and yet difficult aspects of these cases—the psychological effect on the patients as they become conscious of their deformity, and conscious of their inability to change the situation, which apparently weighs upon them forever.

If one can visualize a rather interesting, keen-minded and attractive young lady of twenty-one, who has been constantly, since she was six years old, harassed by the deformity that can be easily seen in the x-ray herewith shown, one can readily see how such a girl would feel about existing conditions, and how her future viewpoint of life could be very depressing to her. The object of the writer in going rather lengthily into this detailed aspect of the case has been to bring more definitely to attention, that the reconstructive surgeon must bear in mind, so far as feasible, that there is an actual mental aspect, depending more or less on the actual deformity, in these cases. The writer cannot do better than to quote the following from the detailed history of the case by the patient herself:

"I must have been about six years old when, one day, a strange horror suddenly came over me that I was not as other children. I noticed that people whispered together about me, and instinctively a very grievous hurt crept into my heart, and I began to hide my arm from the cruel gaze of the world. My guardian did not understand this childish whim. She endeavored to cure me by shortening the left sleeve of my dress. That only increased my sensitiveness. From that time forward I kept my hand curled up inside that sleeve. Had there been any chance of my arm developing and growing, it must have been checked at that time, for I kept it always close to my side, and drawn up. At times I would crave for freedom, but could never manage to shake off my childish pride and use my arm in public.

"At the age of eight years I had my curious case x-rayed. The doctor found that one of the bones of my forearm had stopped in the early stages of its growth. I had a plaster cast of it made. I then began to pursue a nightly course of three varied massages, after which I would encase my arm in the cast until morning. The massages must have helped considerably. It relieved me at the time. The cast, however, did not satisfy me, I eventually discarded it and began to use a padded splint in its stead. It was exactly the support for which I had unknowingly craved.

"Years passed by and the old grievance grew up with me. I was sent to a boarding school in the East, and there being no one to continue the nightly

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massage, I had to leave all thought of treatment alone.

"It was not until I was twenty years old that I suddenly noticed a change for the worse in my arm. The elbow was too pointed and loose; it irritated me and preyed terribly upon my mind. Sometimes I would crush it desperately against the wall or my bed in my passion to feel it straight. I almost craved to have it broken and re-set. I was in such a constantly irritated frame of mind that I longed to break, hurt or alter it in any way, for better or for worse. I think that my elbow must have gradually slipped during the last few years. I could bend it backward in almost a semicircular position. In ordinary arm exercises I could not use it at all, for my hand could only reach my chest by a great effort. The mere suggestion of an operation was not to be an experiment to me. It was a terrible necessity. I desired a firm elbow and a support for my forearm."

With the above in mind and looking at the x-rays, we see that we had to deal with a definite congenital deformity of the left hand and forearm, what is commonly known as a "lobster claw

PLATE NO. 2 shows the same as Plate No. 1 before operation, but in a different view.

hand". The x-rays show that there was a rudimentary ulna, the growth of which had definitely stopped, and a radius which apparently was not abnormal, but because of the lack of support of the ulna, it became deformed. The radius, as can be seen in the x-ray, was attached to the wrist, going up and turning around the external condyle of the humerus, but apparently curved around without any true attachment. Thus it can be seen that this patient had what might be practically called a flail forearm.

The patient presented herself to me with the forearm held close to her bosom, a scarf over it, half frightened, and half fearful as to what I might do or say, and desired no one but myself to make the examination, even resenting the presence of a nurse. It can thus be recognized, in a small way, what this patient's fears were. The hand was useless, but there was some motion in the finger and the thumb, not enough to be of any service whatsoever, and the patient told me that she often wished her arm had been amputated in infancy, that she might not have known what she possessed. An operation was advised. The operation contemplated was a combination of fascia-lata from the thigh, a bone graft from the tibia to be added to the ulna in order to stabilize the wrist and forearm on the ulna, the hand to be brought down as much as possible, and a more stabilized elbow secured. The arm was prepared, as were also the leg and thigh but during the operation the procedure was changed as about to be described.

OPERATION—9-6-27—Incision was made on the posterior aspect of the forearm near the elbow; dissection was brought down to the end of the ulna, which was exposed, and the end freshened. In view of the short distance between this end and the wrist, it seemed feasible to take bone from the radius, and thus obviate the necessity of taking it from the tibia; therefore, another incision was made in the area of the outer aspect of the elbow over the radius and dissection carried down to the radius, the radius was then sawed off at a point that would approximate the area where it would articulate with the lower end of the humerus. An incision was made on the lateral aspect of the left thigh and a strip of fascia 5″ by 3″ long was cut off of this for ligament substitution at the lower end of the implanted radius at the wrist. This upper portion of the radius, with the head, was sawed through and made into the shape of a round intermedullary graft about 1″ long. With a drill about one-quarter inch in diameter the rudimentary ulna was drilled into its medullary cavity, this graft of radius imbedded, and a hole drilled through the lower end of head of the radius graft. A ligament substitute of fascia was then passed through this hole and sewn in position, one end being pulled underneath what was supposed to be the annular ligaments of the wrist and sewn there; the other end was sewn in the opposite direction, after the head of the radius was imbedded in the position in which the ulna should be. The other end of the radius was then smoothed over. A hole was drilled through and the whole capped over with remaining piece of fascia, and sewn in position. All the wounds were sewn with catgut and silkworm gut. The arm was then put up in a semi-pronated position in plaster.

The stitches were removed in the usual course of events, the cast was split and the wounds were found to be healed. Two weeks after operation passive motion started. After four weeks no support was given and the arm started active function. The x-rays findings after operation can be seen in the plate

PLATE NO. 3, taken five weeks after the operation, shows in the lateral view the straight line of the reconstructed ulna and radius.

herewith. The elbow seemed to be a little loose, but the writer felt that as the scar tissue contracted and some of the swelling went down, there would be more motion.

On Nov. 4, 1927, approximately two months after operation, the patient could extend the forearm almost to a complete straight angle, and voluntarily bring it up to 10° beyond a right angle. She had some strength in extension of the forearm. With the arm at a right angle she had about fifty to sixty degrees' rotation.

Examination twenty-four days later (November 28) showed that she could lift things with her hand and control them with the elbow much better than before operation, and that the elbow was more stable. By December 2 there was limited flexion between the metacarpal and the first phalangeal joint.

On December 9, the forearm came to full extension; pronation was not particularly permitted. The patient had some wrist motion and both fingers showed a very marked increase of motion in all the joints. She was advised to limber up the metacarpophalangeal joint of the finger. The thumb was excellent. There was some power in extension of the forearm on the upper arm. As she pushed the forearm against resistance, a definite position of the new head of radius could be felt. Lateral mobility of the elbow had diminished. The patient was advised to use the fingers as much as possible.

By Dec. 20 the finger had increased in flexion except that the first metacarpophalangeal joint still seemed to be limited, although with passive motion it could be flexed at a right angle with some pain. There was decidedly more power in the hand. With the arm at full extension the patient had almost complete pronation and supination and had full strength in flexion. The scar over the head of the radius was not adherent except at one little

PLATE NO. 4. The two holes can be seen in the end of the radius close to the humerus. Through these holes fascia lata was passed and attached to tissue around the elbow. In this plate can also be seen the transplanted end of the radius. One can see the intermedullary insert about ½" in the radius, also the lower end of the radius articulating and fastened to the wrist.

point and the scar along the ulna was not adherent at all. Clinically, following down from the ends of the olecranon process along the transplanted point to the wrist joint, there seemed to be a definite firmness the entire length, so that I believed the transplant to be definitely united, and the bone increasing in its stability. The patient was holding the arm of her own volition at practically full extension, although there was a slight tremor because of lack of muscle power, which I felt would increase. The forearm was much straighter, and the patient could hold the wrist in much better dorsi-flexion so that the curved position the arm had been used to was almost obliterated. There seemed to be marked increase in rotation, and the mobility of the thumb was very much increased.

On examination Jan. 3, 1928, the patient showed very decided improvement in wrist motion, and had greater motion in the finger and thumb, and greater grip and power. When the arm was held fully extended, she could flex the elbow with a good deal of power. The scar at the head of the radius was not adherent and the large amount of subcutaneous fat was disappearing. There was a sort of mobility at the head of the radius which predisposed to a slight instability of the forearm and required watching. Rotation was perfect, and the motion at the wrist posteriorly was from 25° flexion to 45° dorsiflexion. Posterior flexion of the finger was almost to a right angle; actively this was not so great. She could flex the finger if it was held at the first metacarpophalangeal joint. The scar along the ulna had all healed and was not adherent; the elbow tip could be readily made out and motion of the elbow joint felt. There was a slight mobility of the articulation of the ulna with the humerus, which, I thought, with use, would become more firm.

The situation is best expressed in a letter from the patient received shortly after the operation:

"Three months have elapsed since my operation. The rapid gain in strength and firmness of my arm is almost unbelievable. I have recently discovered that I can rest with ease, without the aid of a resting place for my arm and in a natural position. The movement of my forearm, due to the re-creation of the elbow, is steady and natural. I can pick up objects with no effort. Formerly I would have to turn my arm palm upward to grasp any object at all with my finger and thumb.

"I have five contrasting features which are most vividly marked, both in feeling and observation:

1—My elbow was formerly a loose, almost uncontrollable joint. It is now as firm and as perfect as my right elbow.
2—The previously long curved bone of my forearm is now perfectly straight.
3—I have never before had a wrist movement. It now shows signs of a decided rotation which is developing rapidly.
4—The previous absence of support to my forearm is now perfectly adjusted. I no longer desire a splint. The new bone has so re-filled the gap, that, save for my subnormal hand, I can realize no difference whatever between my right and left hand.
5—Where once my arm was crooked and noticeable, I can now carry it with ease in a straight position by my side. The arm is a whole normal hand shorter than the other. Except for that, there is nothing to distinguish it, when covered, from my right one.

PLATE NO. 5 shows the final result taken January 4, 1930, two years and four months after the operation. One can see how well the transplanted radius has merged into the rudimentary ulna, and the picture shows full extension with wrist and elbow.

X-rays were made on January 4, 1930. As can readily be seen, the area where the graft was put in has merged into one bone. The patient now has a perfectly serviceable, steady forearm with considerable power. She is able to handle things, and to use the two fingers of the hand. On the whole, one would feel that in this particular congenital deformity an operation of this type is eminently justified.

NEW ENGLAND HEALTH INSTITUTE

ADDRESS OF CHRISTIAN A. HERTER* AT THE DINNER OF THE MASSACHUSETTS CENTRAL HEALTH COUNCIL, HOTEL STATLER, THURSDAY EVENING APRIL 17, 1930

I FEEL that it is very presumptuous of a layman to intrude himself on this gathering and address himself to a subject in which you qualify as experts. On the other hand, while the carrying out of a program of public welfare, whether international, national or state, is essentially a task for those with special training, I am convinced that that task can never be fully performed or reach its full measure of success without the understanding and public support which can come only from laymen. It is, therefore, in the capacity of a layman deeply impressed by the leadership of the Commonwealth of Massachusetts in the field of public welfare that I venture to give you a brief picture of the accomplishments and aims of our State.

Before devoting myself to specific details, may I avail myself of this occasion to express my respect and admiration for the undramatic yet progressive leadership which Governor Frank G. Allen has shown in his public welfare program. May I also, at the risk of seeming to employ Californian methods, call your attention to the exceptionally high standing of the individuals who head our different departments of public welfare.

Massachusetts spends more money per capita than any other state in the Union on its departments of Public Welfare, Public Health, Mental Diseases and Correction. In fact, 37½% of our total budget of $64,000,000 is so expended. If we add the Departments of Education, Public Safety, and Labor and Industries, the total sum being expended during the current year for the promotion of public welfare in Massachusetts will exceed $45,000,000.

To boast of large public expenditures is not in itself a virtue, but if these expenditures result in paying a full return in human health and human happiness, they can be begrudged by no one, and can well be a source of envy to every other state in the Union. Let me examine briefly our record and our program:

Our record reveals the following milestones:

1. Massachusetts established the first state training schools for delinquent children—the Lyman School for Boys at Westboro, in 1847, and the Industrial School for Girls at Lancaster, in 1854. Delinquent children are committed to the care of the trustees of the training schools until they are twenty-one years of age, or are honorably discharged, instead of for a term of years.

2. Massachusetts was the first state, in 1869, to place dependent children in supervised foster homes rather than in institutions. It maintains no orphanages. Today the State cares for 6,118 children at a yearly expenditure of more than a million dollars. No other State can approach these figures.

3. Massachusetts established the first State Board of Health, in 1869.

4. Massachusetts adopted in its Department of Correction the first probation law in the world, in 1873. In 1925 the United States Government passed an act which almost copies the Massachusetts law, authorizing the appointment of probation officers by each of the United States district courts.

5. Massachusetts established at Framingham the first model reformatory for women in the United States, in 1877.

6. Massachusetts established the first state sanatorium for the treatment of tuberculosis in 1898.

7. Massachusetts took the lead in introducing compulsory medical school inspection, in 1906.

8. Massachusetts established the first school for the feeble-minded in this country, the Walter E. Fernald School at Waltham.

9. Massachusetts passed a mandatory Planning Board Law, requiring places of 10,000 or more population to create planning boards. The next year it passed legislation allowing smaller towns to create similar boards. There are 112 such boards in existence today.

10. Massachusetts and Rhode Island are the only states which have state infirmaries.

11. Massachusetts, in 1924, was the first state to call for a thorough medical examination of any person sent to jail for more than thirty days.

The data I have cited above show merely the pioneering record of the State. Its record in adopting the best practices of other states is equally good. Let me look briefly at just one of our state departments:

The Department of Public Welfare gave aid, last year, to over 48,000 persons, 30,000 of whom were dependent, 10,000 of whom received mother's aid, 6,000 of whom were school state poor, and 1,500 of whom were suffering from dangerous diseases. It cared, in one form or another, for over 11,000 children, placed in training schools over 2,500 children. It cared for nearly 1,000 children in its hospital school for crippled children. It supervised private charitable agencies, expending, during the year, over $44,000,000 and it supervised 112 planning boards.

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It is impossible, in this talk, to analyze in detail the method pursued in each of our state departments, but I want to touch briefly on our systems of public assistance, child guardianship, and probation.

Under its *Mothers' Aid*, Massachusetts gives help as a relief measure, administered by local boards of public welfare, rather than as mothers' pensions. This plan offers elasticity and opportunity of adequate investigation and constant supervision of the individual case. Not only widows, but mothers of dependent children under sixteen, whose husbands are totally incapacitated by reason of chronic illness, insanity or imprisonment for a long term, or are divorced or legally separated, are eligible. In addition to Mothers' Aid, Massachusetts is the only state which, through the state, the cities and towns, gives reasonably adequate assistance to aged people and to families in want because of unemployment or some other factor. Again the system of administration by local boards insures proper local responsibility and proper investigation.

The *Division of Child Guardianship* cares for over 6,000 dependent and neglected children by a system of placing in foster homes. About one-half of these children are dependent and have been received at the requests of parents or friends, or local boards of public welfare. The other half are neglected and have been committed by the courts because of their parents' immorality or bad home conditions. Children are not taken for reasons of poverty alone. Where poverty alone exists, Mothers' Aid is given in order to keep the children in their homes.

In the care of its delinquent children, Massachusetts maintains training schools to which the juvenile courts may commit children under seventeen years of age. The average length of stay in the school is about one year. Children are allowed on parole to their own homes, and under supervision of parole visitors. At the schools themselves, all forms of industrial education, farming, carpentry, sewing, arts and crafts, and domestic sciences are stressed.

The two-year program which Governor Allen has inaugurated, and which is at present in process of fulfillment, is the most extensive ever undertaken in the State. The building program alone will add bed accommodations in our various hospitals and institutions for over 1,000 new patients, as well as 500 officers and employees.

Two important investigations were begun last year, which are to be completed this year. The first is a survey by the Department of Public Welfare of all crippled children in the State under the age of 21 years. The Massachusetts Hospital School at Canton for the training of crippled children is recognized as the greatest institution of its kind in the United States. The Governor conceived the idea that out through the State there might be large numbers of crippled children, as yet undiscovered by all existing agencies, in need of the opportunities afforded by the school, or unprovided with proper care and education. He also had in mind that such a survey would stimulate the interest of local employers and open up wider opportunities for the crippled children to find employment.

The second investigation comes under a special commission to revise the laws for the welfare of the children of the State. It was found that laws applying to neglected and delinquent children were in conflict, and that many inconsistencies and defects exist in the laws regulating school attendance, health and employment of dependent children. This work is well under way and the commission hopes to complete it late in the year.

Provision was made, last year, for the construction of a new children's building at the Lakeville State Sanatorium, for the treatment of children suffering from bone and joint tuberculosis, at a cost of $132,500. There, after an average stay of three to five years, with the employment of sunlight and surgery, a large proportion of the children can be returned to the community with a minimal deformity.

One-third of all the children in this institution have been found to be infected by bovine tuberculosis. Last year Governor Allen increased from $100,000 to $250,000 the appropriation for reimbursement of owners of cattle killed on account of tuberculosis, and this year he has increased this amount to $400,000. The law encourages cattle owners to maintain herds free from tuberculosis, offers the services of inspectors for testing to determine which animals are infected, and gives the owners partial reimbursement for animals condemned and killed after the test has been applied.

A new admission and isolation building has been erected at the North Reading State Sanatorium, which is an institution for children suffering from tuberculosis of the lungs, at a cost of $172,000.

The State, this year, for the sixth consecutive year, is maintaining children's clinics for tuberculosis in the public schools, and the appropriation for this work is now at its peak, having been increased to $78,000. More than 100,000 children have already been examined in these clinics.

While important strides have been made in tuberculosis control, during the past decade or two, this disease is still killing more persons, between the ages of 15 to 39 years, than any other.

With one in seven persons over 40 years of age dying today of cancer, the State has made splendid progress in the early diagnosis and treatment of the disease. It maintains a central cancer hospital at Pondville, with facilities for caring for a thousand cancer patients a year. An addition to this institution is soon to be opened, improving out-patient facilities and furnishing 25 more beds. In various cities and towns 17 state-aided clinics are maintained.

Provision has been made, this year, for an intensive study of the problem of aged sufferers from chronic disease, with the particular pur-

pose of determining how far the insecurity of old age may be lessened by the early diagnosis and treatment of chronic illness.

On recommendation of the Governor, a research laboratory is to be established at the Wrentham State School for the purpose of conducting mental examinations of feeble-minded, mentally retarded, and delinquent children. A study is being undertaken, also, looking to the development of a well-conceived and thoroughgoing plan for discovering and training every mentally defective and retarded individual in childhood.

The picture that I have just given you is a very inadequate view, but neither time nor your patience will allow telling the whole story here. In conclusion, however, I wish to refer to one theme on which I just touched at the beginning. It is my only excuse for being here. That theme is the importance of giving to every citizen a true conception of the extent to which the State is endeavoring to add to his health and his happiness. Ignorance on the subject is appalling, and indifference to it almost no less great. Public welfare activities of the government seem to be taken for granted, while the police activities of the State loom more and more in the public mind as the only function of government.

It is to try to correct this situation that a group of public-spirited citizens in Massachusetts recently formed the Massachusetts Public Welfare Council. Its purpose is not only to cast a critical eye on the program of each successive administration dealing with public welfare, but likewise to extend knowledge of what has been done and is being done by the State and for whom. It has no intention of building a separate organization of its own to do this. It hopes to use those existing civic bodies, composed of both men and women, to spread the good word. It intends, likewise, to make as full use as it can of the press of the State, through the dissemination of newspaper articles. Its only mission will be to try, through education, to lend the strength of public knowledge and support to the admirable work upon which all of you are engaged.

THE VALUE OF TUBERCULOSIS SURVEY IN PROMOTING THE PUBLIC HEALTH*

BY MURRAY P. HORWOOD, PH.D.†

IN 1920, the author presented a paper before the American Public Health Association on the "Value of the Public Health Survey in the Public Health Campaign". In that paper, published in the *American Journal of Public Health* for February 1921, it was demonstrated that the public health survey is of value for the following reasons:

1. It is the best and only means of determining the exact status of health conditions in a community.
2. It is an effective means of evaluating the existing health activities and of apportioning the budget available for public health work.
3. It serves as a scientific basis for developing the future public health program of a community.
4. It is a useful means of introducing health reforms.
5. It is helpful in stimulating active public interest in the conditions affecting the health of a community.
6. It is a powerful agent for promoting public health education.

It was also indicated that whether a public health survey proves of value is dependent on three factors:

1. The degree and effectiveness with which the community has been organized for the survey.
2. The extent to which the survey has been attended by judicious publicity.
3. The extent, effectiveness and permanence of the organization responsible for the follow-up work.

Numerous illustrations were also given to demonstrate the tangible results that have been obtained from public health surveys. Full time, trained health officers have been appointed as a result of health surveys; milk supplies have been improved and placed under better supervision; water supplies have been purified and water purification plants given expert supervision; the vital statistics have been made more complete and subjected to more complete analysis; popular health education has been introduced; fly and mosquito nuisances have been combated more effectively; infant welfare work has been inaugurated; health department laboratories have been established; school medical service has been improved; school sanitation has been bettered, and more adequate protection against fire introduced; antituberculosis activities have been reorganized and extended, and other important public health activities, too numerous to mention in detail, have been initiated or improved.

Since 1920, however, there has been tremendous activity in the field of public health survey work. The American Public Health Association organized its Committee on Administrative Health Practice; two exceedingly valuable reports on health conditions in the larger cities of the United States have been published through the aid of the U. S. Public Health Service; the

*Presented at the New England Health Institute, Boston, April 15, 1930.

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American Child Health Association was stimulated to conduct its nation-wide study of health conditions in medium-sized cities, and to make its lasting contribution to public health administrative practice through the publication of its excellent report on a Health Survey of 86 Cities. Most important of all, there developed, as a result of all this activity, a simple and ready means of evaluating municipal health activities through the adoption of the City Health Appraisal Form by the American Public Health Association. This has undoubtedly been a very useful weapon in stimulating more progressive health work in American municipalities.

At the same time that this nation-wide survey movement, sponsored by the leading professional, official and voluntary health agencies, was getting under way and gaining momentum, private enterprise was still going on to some extent. Among the outstanding public health surveys performed during this period were those of Haven Emerson in Cleveland, San Francisco, Louisville and Philadelphia, of C.-E.A. Winslow in New Haven, and M. P. Horwood in Lafayette and Tippecanoe County, Indiana. In addition, Horwood developed a modified health survey, adapted primarily to tuberculosis work, and, during this period, has performed tuberculosis surveys in Philadelphia, Boston, Cambridge, and Holyoke. Sufficient time has now elapsed to evaluate the effectiveness of this instrument as a means of promoting public health work, and to observe whether it is comparable in value to the general health survey. This can be done by studying the situation as follows:

1. By observing the changes that tuberculosis surveys have effected and comparing them with the changes introduced by general public health surveys.
2. By comparing the subjects included in the tuberculosis survey with those included in the general public health survey.
3. By comparing the time and expense involved in each type of undertaking.
4. By comparing the recommendations recorded in each type of survey report.

First, what are the changes effected by tuberculosis health surveys?

In one case, the tuberculosis clinic service was transferred, in a large city, from the State Department of Public Health and placed under the supervision of the Division of Tuberculosis, in the local health department, created especially for this purpose. The local tuberculosis association was reorganized, placed under capable direction, and the extensive community health program outlined in the survey report has now served as the basis and plan of activity for 8 years. As a result of this survey an effective and extensive campaign of industrial health work has been established by the local tuberculosis association, which includes medical examinations, industrial hygiene and sanitation, and health education. Numerous other achievements of lesser magnitude have resulted, but they have all been of considerable significance to the general health of the community.

In another city, the tuberculosis survey was directly responsible for establishing a division of tuberculosis in the local health department; for transferring the local tuberculosis hospital to the same supervision available for the other municipal hospitals; for decentralizing the tuberculosis clinic service, and establishing additional clinics in order to meet the local problem more effectively; and for placing the public health nursing service on a generalized basis. In addition, the survey disclosed the existence of a serious tuberculosis problem among the negro and Irish residents. It disclosed important variations in tuberculosis mortality by color, nativity, age and sex, and stimulated a whole chain of activities aiming at their correction, including special campaigns against tuberculosis among the negroes and Irish, and among young women between 15 and 29 who are employed in business and industry. Efforts to better housing conditions have also been made, and there have been marked improvements in school sanitation, health education, tuberculosis preventive work in school children, and medical supervision in the schools.

In a third community, where a tuberculosis survey has been performed, the medical inspection service was improved, and the local Board of Health, in accord with the recommendations of the survey report, is at present urging the adoption of health centers in school buildings to provide pre-natal, infant welfare, pre-school, anti-tuberculosis and dental clinic service. It is also advocating the appointment of a full-time health officer trained in public health science, the improvement in school sanitation, and the provision of suitable health rooms in the schools.

Space forbids the detailed enumeration of all the achievements of such undertakings. It is important to mention, however, that there are numerous intangible benefits which may develop from surveys that may outweigh in importance any tangible accomplishments. Better understanding among existing agencies, leading to greater coöperation, may be established; the community may become health conscious, and a whole new civic psychology may be created.

In these surveys, the communities were well organized; there was adequate publicity; the work was performed with the consent and coöperation of the local and state departments of health in each case; and conferences were held with the board of health or other responsible officials at the termination of the work to discuss the propriety of the recommendations.

In every case, the tuberculosis survey was conducted with the broadest possible interpretation of the factors that may affect the prevalence or mortality from tuberculosis. If this is done, the tuberculosis survey almost becomes a general public health survey. This is necessary since the remarkable reduction in the mortality

and morbidity from tuberculosis which has been witnessed in the United States since the beginning of the 20th century, has not been due to anti-tuberculosis activities alone, but has also been due, in part, to the improvements and advances made in the general health program of the community. This includes the pre-natal, infant, and pre-school child welfare work, the school health work, including school sanitation, health education, the sanitation of milk and other food supplies, and industrial hygiene and sanitation.

Doubtless another exceedingly important factor in the reduction of the morbidity and mortality from tuberculosis has been the improved economic status of the people. People are more prosperous. They are able to enjoy better housing conditions, more food in greater variety, more rest and vacation periods, shorter hours of employment, prompt and more expert medical and nursing service, dental service, and more frequent medical examinations to determine the present status of their health. Finally, through the manifold avenues of popular and personal health education to which the individual has been subjected, he has learned something of the principles of healthy living.

For all these reasons, tuberculosis lends itself as a splendid means for ascertaining the health conditions in a community. In the conduct of the tuberculosis surveys performed by the author, the following items were included:

In the first place, a comprehensive analysis of the vital statistics for tuberculosis was made. This included not only the computation of the specific death rates for tuberculosis, but likewise the specific death rates for tuberculosis by age, sex, age and sex combined, nativity, color, ward and residence. Information on the adequacy and completeness of tuberculosis reporting was also obtained. In this way, a great deal of information concerning the problem of tuberculosis and the handling of vital statistics is disclosed, which is usually not known locally, and as a result, the community is provided with an intelligent basis for waging an effective campaign against tuberculosis. Improvements in the methods of handling the local vital statistics have also followed in the wake of such studies. The local vital statistics are invariably so faulty, due to failure to reallocate deaths by residence, that they are usually of limited value. In these studies, the tuberculosis deaths have always been adjusted for residence. As a result, the true death rate for tuberculosis in the community was often thus determined for the first time.

The other factors included in the tuberculosis survey under consideration have been as follows:

1. A study of the clinical facilities available for the diagnosis of tuberculosis, and their adequacy and effectiveness.
2. A study of the hospital and sanatorium facilities available for the care and treatment of tuberculosis, and their adequacy and effectiveness.
3. School medical inspection.
4. School nursing.
5. Dental supervision.
6. Health education.
7. School sanitation.
8. Open air classes and open air schools.
9. Nutrition classes, posture classes, or other special health classes.
10. Popular health education.
11. Summer health camps for pre-tuberculous children.
12. Preventoria.
13. Pre-natal, infant welfare and pre-school child health service.
14. The organization and activities of the local health department, with special reference to anti-tuberculosis work.
15. The work of the State Department of Public Health with special reference to anti-tuberculosis work.
16. The work of the local and state tuberculosis associations.
17. The work of the local visiting nurse association and the various local welfare and charitable agencies.
18. Supervision over milk and other food supplies.
19. Public health laboratory facilities.
20. Occupational therapy and the education of the sanatorium patient to resume his place in society.
21. Placing the discharged sanatorium patient in industry and providing him with effective and adequate supervision to insure the continuance of his health.
22. Industrial health work, including medical and nursing supervision, industrial sanitation, and health education of the industrially employed.

The major differences between a tuberculosis survey as outlined above and a complete public health survey are found in the following omissions:

1. Water supply.
2. Sewage Disposal.
3. Refuse Disposal.
4. Parks, Playgrounds, and Recreational Centers.
5. Mental Hygiene.
6. Cancer.
7. Organic Heart Disease.
8. Adult Hygiene.
9. Control of Communicable Diseases.

As a matter of fact, however, some of these items are included in a tuberculosis survey and others may be legitimately omitted in certain parts of our country. For example, it is unnecessary to study the water supply problem or sewage and refuse disposal in the great majority of our New England cities, as part of a tuberculosis survey, since they are taken care of quite satisfactorily in most instances. On the other

hand, in the newer and less developed sections of the country, the inclusion of these items, even in a tuberculosis survey, would be desirable, since the author believes that the Mills-Reincke phenomenon holds true even today, if we accept the viewpoint that anything that makes for improved vital resistance aids in diminishing the ravages of tuberculosis. Certainly a safe water supply, a satisfactory method of sewerage and sewage disposal and a suitable method of dealing with garbage and rubbish do make for better health and convenience and, therefore, for increased resistance.

The situation with regard to water supplies and sewage disposal in New England holds true for parks and playgrounds. Except in rare instances, most American communities provide for parks, recreation centers and play areas, to a reasonably satisfactory degree.

With regard to the other exceptions noted, it can be said that mental hygiene plays an important part in the treatment of tuberculosis and, therefore, cannot be ignored in a tuberculosis survey. Cancer and organic heart disease have, however, not been included in tuberculosis surveys, although already the local tuberculosis associations are being selected as the agencies through which the campaign against cancer is, in part, being conducted. Since the procedures against heart disease are often similar to those employed against tuberculosis, many tuberculosis associations have already undertaken campaigns against heart disease.

If there has been one significant contribution of the anti-tuberculosis campaign, it has been its emphasis on popular and personal health education. Since such excellent progress has been made in combating childhood diseases and in promoting child health, attention is now being directed to the hygiene of adult life. Tuberculosis has always taken its greatest toll in the adult age groups. As a result, adult hygiene has been preached in anti-tuberculosis activities for many years. Adult hygiene, therefore, is not something new to the field of tuberculosis endeavor.

It may be asked, then, how does the tuberculosis survey differ from the general health survey? The answer is that it differs in degree of emphasis on each item rather than in the number of items included. The analysis of the vital statistics, clinics, hospitals, out-patient departments and the other health activities is more limited. Yet even this limited analysis makes it possible to see the entire public health problem clearly, and thus enables the surveyor to make recommendations which affect the general community health program.

It will be admitted, I hope, that in the present state of public health practice in this country, there is less politics and a higher degree of conscientiousness and purpose in a greater proportion of voluntary health endeavors, such as tuberculosis associations, than in the various municipal health departments. It is difficult to convince a local board of health that it ought to spend money for a general appraisal of its health work. They dread such an undertaking in many instances, fearing the condemnation of publicity. Frequently, too, they lack the social vision to see the value of such a comprehensive survey by experts. Such deficiencies are rarely found in voluntary health organizations. The latter usually strain at the leash in their endeavor to make community health work better, and, in many instances, they have the social vision and the idealism of crusaders in their efforts to promote the welfare of man. The author has never had to stimulate a request for a tuberculosis survey, and he has performed over a score for tuberculosis associations. The request has always come from the voluntary health group. In about 35 tuberculosis and public health surveys which he has performed to date, only one was made and paid for by a local board of health. All the others have been conducted and paid for by voluntary health organizations. It is a good investment for the voluntary health organization. Invariably it makes for greater coöperation between the official and voluntary health agencies; it stimulates new activities and suggests changes in the old; it makes for publicity and education; and it leaves the community with a definite health program to serve as a basis for its future health activities.

Needless to say, tuberculosis surveys are cheaper and less time-consuming, and these are advantages that must not be forgotten or overlooked. They facilitate frequent examinations and appraisals, while a general health survey will do so less satisfactorily.

It is unnecessary to compare the recommendations of tuberculosis survey reports with those of general health surveys to demonstrate the equivalent breadth of the former. Reference to the tuberculosis survey reports of the author will show that the recommendations deal not only with tuberculosis, but with the great bulk of health department activities.

Finally, a general health survey report is apt to present the community with such an extensive and detailed program that, out of sheer inability to digest and assimilate everything at once, there is apt to be only a faltering tendency to adopt any portion of the program. The community is glutted and dazed. Isn't it time that we began to do some of our public health jobs that we know something about thoroughly and well, instead of flitting from one activity to another, as the whim of the moment may dictate, and taking up with every new idea as it comes along, simply because it is something new and gives us something to talk about? The tuberculosis problem is still unsolved. Many phases of it still represent a challenge even today.

Now, as always, it represents a splendid avenue through which to affect not only tuberculosis, but to improve the general health of the community. It calls for more emphasis, rather than less; for a scientific, well-planned, intelli-

gent campaign, rather than the less carefully planned programs of the past. And best of all, it has the lure of the ages. From a disease that was the Captain of Death, affecting all classes, all creeds and races, making widows and orphans prematurely, impoverishing families and destroying their unity, it has been knocked reeling, until today it stands seventh or eighth in the list of leading causes of death. But it is still the most important cause of death among young adults from 15-44. It is still, by far, the disease with outstanding sociological significance. It is still the disease most related to personal hygiene and general health. It is still linked up with industry, housing, sanitation, poverty, ignorance, pre-natal and infant welfare conditions, illness, and the whole gamut of activities that have become part and parcel of the public health movement. The value of tuberculosis surveys has been amply demonstrated. The tuberculosis survey simply awaits more extensive use, not only as a means of diminishing tuberculosis morbidity and mortality still further, but as an excellent device for promoting the general health of the community.

EXTRACT FROM SPEECH BEFORE THE MASSACHUSETTS CENTRAL HEALTH COUNCIL, APRIL 17, 1930

BY H. E. BARNARD*

PEREGRINE WHITE was born on the *Mayflower*, in the harbor of Cape Cod, on November 20, 1620. Millions of children have come to New England homes in the three centuries since that first birthday. They came in swarms, and more than half left their pioneer homes in infancy and childhood to find resting places beside worn-out mothers in quiet spots on the hillsides. Slate slabs and marble stones in ten thousand family burying grounds stand as mute and unforgettable evidence of the harsh conditions of colonial times where large families were the rule and high death rates an inevitable economic necessity. Our wealth, prosperity and power have sprung from the seed sown in the rocky soil of the New England colonies and the sturdy stock that fought successfully the stern battles for life has been planted around the world.

Today 43,000,000 children under eighteen years of age are the hope and the despair of the parents in our country. Two and a half million of these children live in New England. Not so much material is spoiled in the making as in earlier years. We have learned how efficiency profits us in our shops and we are more careful in the shaping of our children. There is not so much raw material, it is true. The birth rate is steadily going down. But the babies who come to us are not wasted by neglect or sacrificed on the altars of ignorance so often as formerly. At least the infant death rate is steadily declining and year by year more infants come unscathed through the perils of birth and babyhood.

These figures are significant and hugely important. It is true that we are making progress toward the goal of health, but our progress is not uniform throughout the country. We are moving forward rapidly in some places, less rapidly in others, and in many parts of the country we are making almost no advance at all.

The national interest in childhood is always centered in the home, but year by year, the community, the state and the nation have recognized their responsibilities in aiding mothers and fathers in the care of their children. Several years ago, President Hoover emphasized the fact that our children are our most precious national asset. When he became President, in his inaugural address he pointed out that public health service should be as fully organized and as universally incorporated into our governmental system as is public education, and that the returns are a thousand fold in economic benefits, and infinitely more in reduction of suffering and promotion of human happiness. President Hoover made this statement with full knowledge of the facts. He is no amateur in the use of materials out of which the social structure is built. His work for the last fifteen years in the field of social engineering has given him expert knowledge both of men and of materials. And so in speaking of the new-found capacity for coöperation on the part of our people he said:

"There is an equally important field of coöperation by the Federal Government with the multitude of agencies, state, municipal and private, in the systematic development of those processes which directly affect public health, recreation, education, and the home. We have need, further to perfect the means by which Government can be adapted to human service."

In these words he established, as it were, a platform on which to build his administration, and on that platform he is erecting, as best he can with the materials at hand, new social structures based on fundamental studies which concern every phase of the life of our citizens. As I have quoted from the inaugural address, may I now quote from his first message sent to the Senate and House of Representatives when the Congress convened last December? In that address his thought with respect to public health took still more definite form.

"The advance in scientific discovery as to disease and health imposes new considerations upon us. The nation as a whole is vitally interested in the health of all the people: in protection from spread of contagious disease, in the rela-

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tion of physical and mental disabilities to criminality, and in the economic and moral advancement which is fundamentally associated with sound body and mind."

How can this interest be best interpreted into organized effort? No engineer works without plans or builds without selecting his materials and counting the cost of the project. President Hoover has had much experience in health administration. His services in Belgium during the War, in the Food Administration in this country, under post-war conditions in Europe, and his leadership in relief work in the Mississippi Valley during the flood of 1927, all gave him facts, based on actual experiment, useful in drafting a workable plan by which further to perfect means for adapting government to human service.

In addition to this world-wide schooling in practical helpfulness, he had the results of the American Child Health Association, which he organized after the American Relief Administration had finished its work abroad. This association, under his skilled leadership, has crystallized in definite form his belief that the health of the child is the strength of the nation and, through the spirit expressed by the Child's Bill of Rights, has established ideals which, when fulfilled, will build a new world for oncoming generations.

To develop these plans and to coördinate the best knowledge of workers in every field which relates to, or touches, the life of the child, the President organized a White House Conference on Child Health and Protection. When the committee he called together to perfect the plans for the studies of the conference met with him at Washington, he said in part:

"In taking national stock of the progress and present situation in the health and protection of childhood, we are inaugurating a most important movement to the Nation as a whole. In order that these investigations and the commonsense plans for further advancement may be brought about in the most effective manner I have suggested that a number of committees should be organized to cover different phases of the subject embracing the leadership in thought and knowledge of these subjects throughout the Nation.

"We realize the major progress in this direction must be made by voluntary action and by activities of local government. The Federal Government has some important functions to perform in these particulars, all of which will need to be considered, but we may save years in national progress if we can secure some measure of unity as to view and unity as to program, more especially as these views and programs are to be based on searching examination of fact and experience."

So the work was started by the organization of four major sections for the study of children. The first section relates to the physical well-being of the child and its work is carried on through three committees: one on *Growth and Development:* another on *Prenatal and Maternal Care:* and still another on *Medical Care for Children.*

The studies of this section are of fundamental importance for they discuss every phase of the life of the child from the prenatal period through the hazards of birth, infancy, and adolescence to the eighteenth year. The effects of heredity, parental health, environment, nutrition, and all the other factors which influence child life are being investigated by groups of experts, each composed of the outstanding scientists in that particular field. As an example of the thoroughness with which the committee work is organized, the sub-committee on *Nutritional Requirements* is preparing reports which will bring together the results of the intensive studies of biochemists, physiological chemists and nutritionists, and, as well, the data in the hands of pediatricians, dietitians, and the groups of professional workers in the field of child nutrition.

A second committee of Section I is discussing *Medical Care for Children:* pediatricians, psychiatrists, orthopedists, dentists, nurses, statisticians, and social workers are contributing of their wide knowledge in this important field. The committee on *Prenatal and Maternal Care,* fully cognizant of the high maternal death rate and infant mortality in this country, is making a critical study of all the conditions which in any way influence the health of mother and child. Special attention is being given to obstetric teaching and to the education of physicians, nurses, midwives, social workers, and the laity. A critical inquiry is being made of the factors and causes of fetal, newly born, and maternal morbidity and mortality. It is the hope of this committee that, out of the study of the experiences of the past and the present situation with respect to maternal and infant mortality, it may be able to suggest further investigations and activities which will far more adequately than at present protect both mother and child.

Section II is devoted to the study of State and Federal means of promoting public health. Its work is done through three committees: one on public health organization, another on communicable disease control, and a third on milk production and control.

This section of the Conference is making a critical examination of the technique of public health administration as it is now carried on by local, state, and federal health agencies. In developing this work the section is consulting health officers, the research investigators of the medical departments of the government, physicians, experts in the field of public welfare, and all the groups which have a part in, or which may properly share in, a study of the broad question of the relation of the activities of the

community and of the state to the health of our children.

A special study in this section will relate to *Communicable Disease Control*, and for this report we have called to the service of the Conference the workers in the highly specialized fields so well served by epidemiologists, immunologists, bacteriologists, vital statisticians, and as well the pediatricians, school physicians, nurses, and health officers, who contact with children in the home and school.

Another important subsection is concerned with *Milk Production and Control*, as the most important single item of food for children must have adequate supervision. We have made amazing strides in the production and handling of milk in the past twenty years, but in spite of our knowledge and the application of that knowledge to the industry, we are still too frequently shocked by widespread epidemics, which in the years to come cannot be allowed to put such heavy burdens on our children.

The third section of the Conference is studying the education and training of the child, not in the thought that it should review the whole field so well tilled by our great school organizations, but in terms of his mental and physical health as related to school training. Many committees have been set up under this section. One is discussing *Family and Parent Education*, for we realize more than ever before the futility of a system of education which leaves the young mother almost wholly unequipped with knowledge of how to care for and train the babies who are the family's most important contribution to society. Parental education is a new term. We hardly know what it means, but we do have some idea as to the needs of the child which he can receive only in his home where, during his earliest years, his bodily vigor is established and habits and character formed under the loving care of competent parents.

Another committee is considering the *Infant and Preschool Child* in an effort to interpret child psychology as established by the experiences through which the baby passes while its mind is so rapidly adjusting itself to its environment and every influence which affects it for good or evil.

The *School Child* is no less a problem and the committee engaged in this study is giving special attention to every phase of school life which, directly or indirectly, relates to health education and the development of habits of thought and action tending toward good health and a maximum of happiness and efficiency.

Too many of our children leave school unequipped for their work in life. They do not choose their occupations—they fall into their jobs. This is unfortunate for the children, for the job, for society. It may be possible to direct children in the selection of their life work. In a few cities progress is being made in setting up a system of vocational guidance as a part of the school technique. This work is closely related to child labor and so a special committee is considering these two important dilemmas which face the child—the economic and industrial problem which drives him to his daily stint before his body is built or his mind adapted, and the educational or training problem of fitting the school child to an occupation for life which provides him maximum opportunity for development.

Our children spend about 15 per cent. of their school life under the teacher's care. The rest of the day is occupied in sleep, work, and play. There were no difficulties connected with the leisure time activities of pioneer boys and girls, for they had no leisure. They were workers beside their fathers and mothers from the first day they learned to carry chips to the kitchen fire. Their minds and muscles developed as they did their daily chores. The child today is not so fortunate as to have a home close to nature and happy labor. There are no longer any chores in which children can learn by doing. At least for a large part of our population something must take their place, for there is much truth in the old saying, "Satan finds some mischief still for idle hands to do". So the recreation of our youth has become as important a part of their life as their hours in school. Some of us may wonder why it is necessary to teach a child how to play, but that is because we do not understand children or the surroundings in which they now live. In the last few years we have developed organized play alongside of organized education and as many faults and errors are creeping into the system as we have had to discover and throw out of the schoolroom.

Many educators feel that today our schools and our children are suffering seriously as the result of an over-development of organized athletics in the form, for example, of high school basketball teams; that the game thus played is injuring the boys and girls who participate in the sport, the school system of which they are a part, and the whole community which, in its enjoyment of basketball rivalry, clearly overemphasizes the minor part the athletic director plays in the physical and health education of all the children in the school. All these activities of physical education and recreation are being studied by an important committee of the Conference, and it may be that the conclusions reached as a result of these studies will help us in developing better systems of supervised playgrounds for our city children in intelligently directing sports for country boys and girls, and in setting up a more helpful form of competitive athletics through which the school teams can still be developed without prostituting the very life of the participants to the effort to bring home the championship.

In many cities the school system recognizes the importance of giving special training to children who have poor eyesight, who are hard of hearing; who have bad hearts, and lungs, or

internal conditions which make them physically below par although mentally they are quite as fit as their companions. These children, if carefully selected and given special instruction, often overcome their handicaps. Tuberculous and cardiac children usually regain their full health and, under proper training, children with bad eyes and ears are adequately fitted to take their place in society. It is not difficult to meet this problem in cities, where the children can be brought together, but we do not yet know how to handle these groups which are scattered throughout the country. If we can devise a way to reach and to teach them, there will be far fewer deaths from heart diseases or tuberculosis and a much smaller number of children destined to be cared for at state institutions for the blind and deaf.

The fourth section of the White House Conference is studying the *Handicapped Children*—the group which has through all the centuries been the special care of the good Samaritan. This section is studying the prevention, maintenance and protection of the handicapped. It is interested, first, in definitions. What is a handicapped child? Is a child who has lost an arm or a hand by playing in the street handicapped for life? Is a child whose father and mother are gone handicapped? Is the boy who is dragged into the juvenile court by a policeman handicapped? Just how sure are we that we are not more concerned in building splendid hospitals and supporting orphans' homes and organizing juvenile courts than we are in the children who flow into them in a never-ending stream, and in the social and economic conditions which feed the stream?

We have learned, decade by decade, how better to care for our orphan children. We think we have found good substitutes for mothers' care and love in the systems we have developed for placing children in selected homes. The orphan child has almost an equal opportunity with the more fortunate boy and girl when, by adoption, he enters into the heart and home of childless couples. Our State institutions for the care and education of the blind, deaf and feeble-minded children are certainly well organized and in the main well administered, but we are not yet sure that the systems we have established are socially sound or economically justified. We do not yet know how to control the propagation of the unfit, or, having the knowledge, we do not apply it. The systems by which we care for our dependent children vary in almost every State and community. Surely there must be some best way. We hope to find that way.

Our delinquent children are, if we give credence to the reports of social workers, our great problem. What shall we do with them? Because they run away from school, are they criminals, to become the care of policemen and the court, or are they normal children, perhaps a little unstable and maladjusted, perhaps, indeed, a little more normal than many other children in that they resent the confines of the school room and the supervision of a teacher who does not understand them and long for a more active life than that established for them by rigid school systems? Is the boy who makes trouble Hallowe'en night, who breaks windows and calls names, fights and is insolent of authority, a criminal, or even a delinquent? Perhaps the fault lies in his home or in us. Is it not probable that we have failed in our responsibility? "What are we going to do about it?" asks the chairman of the Committee which is studying the *Delinquent Child*.

One thing is certain, we are making no progress in handling the problem of the rascally child by sending him to institutions which, no matter how well we try to maintain them, in the very nature of their organization, set up abnormal conditions and establish social relationships which, as the records show, tend to develop a criminal class with which, in our ignorance, we are quite unable to cope.

I have told you something of the organization of our committees and of the studies we are undertaking. You can see that it is no simple thing we have set out to do. The longer we work with these problems, the more complex they seem to be, but we are not discouraged for we feel we are making progress in the very setting up and analysis of them. We, at least, know something of what there is to be done, and as our committees, composed, as they are, of more than seven hundred experts in many fields, collect and analyze their data, we are hopeful that many new things are going to show up.

We are almost certain, out of our studies, to gain additional knowledge in the proper feeding of children. Without doubt we shall make real progress in fitting health training into the education of the child. We shall learn how effective sand-lot baseball is in directing normal gang life into controlled channels. We shall, perhaps, find new values for the crippled children, whom we have pitied because of their maimed limbs, rather than admired for their superior mental equipment and rapid adaptation to normal life. We hope to find a new definition for delinquency and better ways for controlling the normal and yet often to be regretted tendency of youth to depart from the narrow paths of obedience to hunt ripe watermelons in other persons' fields.

The full purpose of the White House Conference will not be attained until we have established an adequate federal and state public health administration. In his inaugural address the President pointed out that, while the organization of preventive measures and health education in its personal application is the province of public health service, it should be based upon local and state responsibility. This thought he more fully developed in his message to Congress, when he said:

"In the practical working out of organiza-

tion, exhaustive experiment and trial have demonstrated that the base should be competent organization of the municipality, county, or other local unit. Most of our municipalities and some 400 rural counties out of 3,000 now have some such unit organization. Where highly developed, a health unit comprises at least a physician, sanitary engineer, and community nurse, with the addition, in some cases, of another nurse devoted to the problems of maternity and children. Such organization gives at once a fundamental control of preventive measures and assists in community instruction. The Federal Government, through its interest in control of contagion, acting through the United States Public Health Service and the State agencies, has in the past and should in the future concern itself with this development, particularly in the many rural sections which are unfortunately far behind in progress."

This statement recognizes the several branches of the government and of the states which have a concern in public health and the welfare of women and children. But the President coördinates these activities as a function of the government as a whole, rather than as the special duty of particular bureaus. If his suggestions, based on his wide experience and the joint opinion of expert advisors, can be worked out in the course of the years so that there will be efficient organization in all of the 3000 counties in the country, and the towns and municipalities in such sections as New England, where the county is not the logical political unit for social health and welfare service, we shall know that we have reached the period in the development of public health and welfare work when we have at hand adequate means by which the health and well-being of our children and their parents are assured.

In closing, may I refer again to the aims of the White House Conference for Child Health and Protection in the words of President Hoover:

"We already have enough knowledge which, if brought together, compared and sorted would give us some approach to the normal child. The crux of the problem is as quickly as possible to bring what knowledge we have into the open, broadcast it, and make it familiar to the average busy, but deeply concerned parent. We await from the scientific world that formula which will enable all those who care for children, who seek a better era, to mould the boys and girls of today into stalwarts to whom we entrust our hopes of the future."

COMMUNITY WORK IN A STATE HOSPITAL

By Samuel Hartwell, M.D.

Director Worcester Child Guidance Clinic

The extra-mural activities of a State hospital may well be thought of as having two distinct aspects. The first, that of rendering service to patients, ex-patients or potential patients of the institution and the families and others directly interested in them. The second may be spoken of in general as community education. Much has been accomplished in the last century. Mental patients are no longer thought of as being possessed of a devil; they are no longer chained, punished, or made to suffer unnecessarily. But the unthinking and unnecessary stigma formerly associated in the public mind with treatment in the mental institution has not entirely disappeared.

And while the public's idea of the function and influence of the State hospital in a community is rapidly changing, much yet remains to be accomplished in community education along these lines.

In any community in which there is a State hospital, the members of the staff should be the leaders in educational and applied mental hygiene. Any of the activities of the State hospital outside the institution itself that is accepted and appreciated by the community may not only accomplish its program, but may aid in establishing the hospital and its staff in their natural and desirable place as leaders in all things pertaining to mental health and normal behavior.

Participation by the members of the staff in these as leaders or members in all mental hygiene study groups will do much to overcome the unfortunate attitudes sometimes established in a community. Members of the State hospital staff are regarded as being doctors rather apart from the rest of the medical profession. The State hospital is considered as being an institution apart, and not to be thought of with the other hospitals in the community.

Well planned "lawn days" and special public visiting days in which others than those directly connected with the State hospital or its patients take active part are useful and important in an educational way.

The Social Service activities outside of the hospital are, of course, of the greatest importance not only in the fine service they are rendering patients after discharge, but in helping the community and the other agencies serving the public to understand that mentally sick people are, after all, simply sick people who need understanding and sympathy in the same way as do those who are physically sick.

But of all the outside functions of a State hospital, the Out-Patient Department is the most important. Constant endeavor of those in charge should be to establish themselves and the department in the community in such a way that all those who in any way feel in need of the sort of advice or treatment that the psychiatrist might render, will think of the State hospital, its doctors, and social workers as the ones to be consulted and depended upon in the same way and with the same confidence that they are now thinking of the General Hospital.—*Extract from Bulletin Massachusetts State Department of Mental Diseases.*

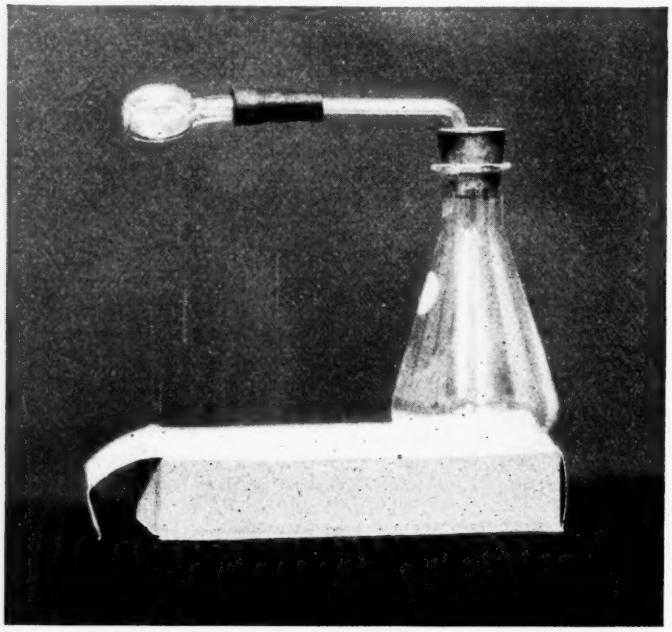
THE NEW INHALER

BY JOSEPH PRENN, M.D.*

THE inhaler shown in the accompanying photograph is designed for the inhalation of volatile solutions, either cold, as ethyl-iodide, or warm, as compound tincture of benzoin.

With this apparatus, the patient inhales the vapor from the solution through the mouth and exhales through the nose. In cases where the medication is intended for the naso-pharynx only, it is not necessary for the patient to inhale; he simply holds the vapor in his mouth, letting it out through his nostrils, as smokers sometimes do, and thus gets the medication on exhalation.

The whole apparatus can be easily sterilized, or the mouth-piece, which, instead of being continuous, is jointed to the rest of the curved glass tubing, can be easily detached for sterilization.



Through this mouth-piece the patient will get all the vaporized solution and the slight coughing and salivation which occur when inspiration is forced and deep are prevented, since when inhaled by the process of calm breathing, ethyl-iodide does not irritate the mucous membrane of the respiratory tract.

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NATIONAL HEALTH INSTITUTE FAVORED BY COMMITTEE

The House Committee on Interstate and Foreign Commerce on May 13 ordered a favorable report on the bill (S. 1171) to establish a national institute of health.

The institute would be formed to include the present hygienic laboratory of the Department of the Treasury and would be under the jurisdiction of the Public Health Service.

The measure provides that the institute may accept gifts from private individuals, and provides for fellowships in the institute for persons wishing to engage in research on health problems. An appropriation of $750,000 would be provided to erect buildings for the institute.—*U. S. Daily.*

PLAYGROUNDS ARE BECOMING EPIDEMIC

The number of towns and cities in the United States and Canada reporting play areas under leadership to the Playground and Recreation Association of America grew last year to nearly a thousand, and more than 1,100 new play areas were opened within the year. Eight hundred and ninety cities reported a total of 23,000 recreation leaders and a total expenditure of nearly $33,540,000 for public recreation. During the year about 14,000 persons were enrolled in training courses for recreation leadership.—*Bulletin U. S. Children's Bureau.*

MEDICAL PROGRESS

PROGRESS IN GYNAECOLOGY

BY FRANK A. PEMBERTON, M.D.*

IT will be noticed in this review that some subjects such as prolapse have not been mentioned. The reason for this is that we do not feel anything new has been contributed.

The opinions on the treatment of acute salpingitis and pelvic inflammation are still overwhelmingly non-operative during the acute stages[1, 2, 3, 38, 39, 40, 41]. If an abscess develops it may have to be opened through the vagina but an abdominal operation should not be done. In the diagnosis, acute appendicitis must be kept in mind, with the feeling that it is better to operate on a few cases of pelvic inflammation by mistake than to miss an appendix. If this happens then the treatment of the tubes depends on the amount of destruction, the age of the patient, and the question of trying to conserve fertility. If the tubes are hopelessly involved or it is not important to save them they should be removed. If a hysterectomy is not done a suspension should be to prevent further morbidity. It is safe to close the abdomen without removing the tubes and without drainage, and continue the conservative treatment, if there is no spreading peritonitis, and if social conditions favor it.

Polak[2] reports the treatment of pelvic inflammation by temporary castration with x-ray treatment after the acute symptoms have subsided in order to prevent exacerbations and relieve pain. The flare-ups occur before and with menstruation. Stopping the catamenia for a few months to a year gives physiological rest and seems to result in quicker relief and less morbidity later. It is especially applicable to tubercular salpingitis. He reports 34 cases, 8 of which were tubercular, and in all of which menstruation returned by the end of 1 year. Wintz[3] has carried out a similar procedure. It is logical and as will be shown later, entails little danger to future child bearing although of course few of these cases will become pregnant because of the inflammatory disease which they have had.

Smith[4] finds, in giving statistics on 63 cases of tubercular salpingitis, that most of them occur between the ages of 25 and 30, that 64% are sterile, and that a family history of tuberculosis is given in 20%. Pulmonary signs were present in 19%. Norris[5] and Polak[2] advise x-ray treatment to cause a temporary castration as spoken of under acute salpingitis. General medical treatment should be used also, especially during the acute stage, and operation reserved for those who are not recovering. When operation is done it must be remembered that the endometrium may be infected and if it is, a hysterectomy is essential. Therefore curette first for a rush diagnosis. If it is negative and only the tubes are found to be involved they may be removed and menstruation will continue.

The result of radiating the ovaries on future child bearing is an important issue because the effect is obtained by destroying the follicles which contain the eggs. Fear has often been expressed that the ova may be damaged by radium or x-ray and, when fertilized later, a deformed child would be born. Also, it has been shown in some animals and insects that the second generation after treatment is not normally robust. It is fair to say that fertilization of a damaged egg may be avoided if several months elapse between the treatment and the fertilization. Murphy[6], who is greatly interested in this subject, has found no deformed children and believes these produced are as well and strong as the average. Doederlein[1] reports 11 patients who had amenorrhoea up to 2 years following radium and x-ray treatment. They had 18 pregnancies later. Thirteen healthy children were born and 5 miscarriages occurred in 3 patients. Polak[7] reports 6 pregnancies with 3 normal children and 3 miscarriages. Wintz[3] says he has no fear of deformed children following such treatment. It would appear that miscarriages may be somewhat more common under these circumstances but deformed children will not be born.

Radium and x-ray treatment during pregnancy is almost sure to result in deformed and feeble-minded children and should be done only under exceptional circumstances. It may happen when the diagnosis is inaccurate, for instance mistaking normal pregnancy for fibroids. In most such cases the treatment will cause a miscarriage if the pregnancy is early but not at a later stage. Murphy[8] speaks especially of the necessity of telling patients, who are having repeated x-ray treatments over a period of weeks, not to have intercourse, for fear of pregnancy occurring and the foetus being damaged by the following treatments.

Murphy[6] tried to get some experimental data on the effect, if any, in the second generation, by radiating rats but found no ill health or underdevelopment. Such treatment has not been carried out in humans for a long enough time for a second generation to have appeared. If any physician knows of a child whose grandmother had x-ray or radium treatment previous to the birth of the present child's mother he should report it in the *American Journal of Obstetrics and Gynaecology* or *Surgery, Gynaecology and Obstetrics* so as to give it the widest publicity possible.

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The treatment of fibroids has shown no change in the last two years. That is a myomectomy is done during the child bearing age if it is possible but near the menopause hysterectomy, radium or x-ray may be chosen.

Radiation is to be used only in cases where the tumor is not larger than a four months' pregnancy, there are no pedunculated fibroids, and no other pathological condition is present. If menstruation is to be conserved radiation is not applicable because it is necessary to cause the change of life to achieve the desired effect on the fibroid. Pelvic inflammation is a distinct contraindication. Cysts of the ovaries and prolapse require operation so the accompanying fibroid should be operated on. Cancer of the uterus must be ruled out because it calls for different treatment. Therefore it is a dictum among gynaecologists that no case is treated with radium or x-ray without a preliminary examination under an anaesthetic with a curettage.

There are many reports of the treatment of fibroids but those of Keene[9] and Polak[7] contain the essentials. The former treated 38% of 259 cases with radium with uniformly good results. The others were operated on. He considers an unstable, nervous temperament as a contraindication to radiation because the change of life makes it worse. Such patients do better with hysterectomy and the conservation of an ovary. Polak is enthusiastic about the treatment of fibroids with radium having done 206 with no bad results but feels that careful diagnosis is the chief reason for his success.

Norris[10] presents a good review of ovarian transplantation. It is used to preserve menstruation where the ovary cannot be left in situ but the uterus can, and to ameliorate the symptoms of the menopause when both have to be removed. He places several disks of ovarian tissue in the body of the rectus muscle. He finds that if not enough tissue takes root to prevent the menopause, the menopausal symptoms are more prolonged than if a castration had been done originally. Twenty-five cases are reported at an average age of 29. In six the uterus was left in and all menstruated after a preliminary amenorrhea of from 2 to 7 months. One has been menstruating for 3½ years but similar ones up to 5 years have been reported by Blair Bell and others. In the other 19 cases he feels there was an easier change of life.

Pavlik[11] reports 11 cases in which the transplantation was done into the fundus of the uterus with the preservation of menstruation in all. In 5 more cases where the tubes had to be removed the ovary was left attached to its blood supply and implanted in the fundus so as to protrude into the uterine cavity. One became pregnant but aborted.

Thorek[12] reports on 44 cases of homeografting. He says that close blood relationship is not essential but that the blood type should correspond. In 3 cases menstruation was reëstablished and 28, who were having menopausal symptoms, were greatly benefited. The reviewer wonders if they will not have their symptoms all over again when the transplant stops functioning.

Sampson[13] found endometriomata in and about the tubal stumps where a previous salpingectomy had been done. These were the result of sprouts from the tubal stump. There were tumors in the broad ligaments in 3 cases and the abdominal wall in 2. He thinks these were transplanted by the surgeon and advises care so as to avoid spilling any blood or tissue during salpingectomy.

King[14] suggests a hormone from the ovary as a possible cause for endometriosis because he has found chocolate cysts in the ovary associated with granulosa cell and luteal cell tumors in the same ovary. The possible connection between the two is however vague.

Haselhorst[15], Read[16] and Smith[17] report their cases of endometriosis, the three papers giving a complete review of the subject. We do not think there is any new information except that Read shows that conservative surgery has a place in the treatment during menstrual life.

Kraurosis and cancer of the vulva are important diseases poorly treated at present because they are not well understood. They are diseases of old age. Any ulceration of the vulva in a woman past the menopause must be considered to be cancer until proved otherwise. Graves and Smith[18] trace the change of a chronic vulvitis into leukoplakia or kraurosis or both and finally into cancer. Leukoplakia was found in combination with kraurosis in all the 18 cases reported. If the disease is seen during the early stage the treatment of the cause may prevent its progression. If kraurosis has developed with its dry, easily injured skin it should be treated by excision or watched carefully to keep ahead of the development of cancer. Pruritis is the chief symptom. Taussig[19] believes that leukoplakic vulvitis is a precancerous condition and the vulva should be excised. After cancer has developed surgery should be resorted to as the results with radium and x-ray are uniformly poor. The essentials of treatment are to remove the whole vulva, the glands in both groins, and those under and above Poupart's ligament. He reports 81% of 5 year cures. The writer of this review thinks that no one should operate on such a case without reading Taussig's excellent paper. These two papers together give a comprehensive review of the important diseases of the skin of the vulva in old age.

The question of whether to remove the cervix with the uterus or do a supravaginal hysterectomy for benign diseases is a perennial one. The objections to leaving the cervix are that it may cause discharge later from being chronically infected, and that cancer may occur in it. In the average hands the mortality of the complete hysterectomy is slightly greater than

that of the supravaginal in comparable cases. One method of evading the issue is to core out the cervical glands from above with the fundus by means of the knife or cautery. This leaves a shell of cervix in which cancer might develop but is less likely to because the chronic irritation from the infected glands is stopped. Kostmayer[20] believes it is better for the average surgeon to use the supravaginal method and thereby save some patients who, if they should develop cancer later, still might be cured of that also, rather than to face the higher primary mortality of complete operation. Richardson[21] describes a new technique for doing complete hysterectomies which is worth reading by those interested. Noble[22] advises excising the cervical mucosa from above with the endotherm needle, the advantage being that there is less bleeding and less danger of postoperative hemorrhage from the shell of cervix.

This discussion is always rather amusing to the reviewer because Graves showed some years ago that the safest method is to do an ether examination at the time of operation and remove, repair, or cauterize the cervix from below. Then a supravaginal hysterectomy may be done leaving a cervix which causes no trouble later. This procedure is effective and entails less danger in the average hands than complete hysterectomy.

A parasite called the Trichomonas Vaginale has been found in the discharge from a good many cases of intense vaginitis. It has an elliptical body with five or six flagella, is about the size of a leucocyte, and may be found by diluting a little of the fresh discharge with salt solution and examining the specimen microscopically without the light condenser. The movement of the flagella is first noted and then the body of the organism can be made out. Cases infected with it present an intense redness of the vaginal wall and cervix. The discharge is cream colored and foamy. It may be mistaken for gonorrhoea. The patient complains of intense itching and burning.

Greenhill[23] and Davis and Colwell give a good description of the disease with the treatment, which is not definitely worked out as yet. They advise scrubbing the vaginal wall carefully with green soap followed by the insertion of a glycerine tampon or rubbing an alkaline powder into the mucosa and the use of lactic acid douches. This treatment is applied every other day and may have to be kept up for several weeks. The disease is prone to recur.

Three excellent papers have been published on the relation of cervicitis to cancer of the cervix and the early diagnosis of cancer of the uterus, both cervix and fundus[24, 25, 26].

It is agreed that the specific cause of cancer of the cervix is not known but that long continued chronic irritation and maceration of the cervical tissue is the stimulus. The irritation is caused by infection in the cervical canal, especially the glands, which results in a chronic discharge. This infection is due to exposure of the glands to a new environment by laceration of the cervix with eversion during child birth in most cases, because 95% of cervical cancer occurs in women who have had children. In the others a history of instrumentation, dilatation of the cervix, or cervicitis can be obtained.

Cancer does not develop for years after the original injury, 9 to 20 according to Novak[24], and Pemberton and Smith[26].

Prevention consists in removal of the infection by treatment of the cervix either by cauterization, repair, or amputation. Since it takes so long for cancer to develop the patient has time to bear all the children she wants before radical treatment for the prevention of cancer is required. It is logical therefore to advise the examination of all parous women at about forty years of age and the treatment of those who have inflamed or ulcerated cervices. That such treatment is effective is suggested by the figures of Pemberton and Smith that of 669 cases of cancer of the cervix seen at the Free Hospital for Women only 12 had had treatment of the cervix previous to the appearance of cancer and of 3814 cases of cervicitis treated by repair only 5 developed cancer later, while none of 1408 cauterized cervices and 740 amputations have so far had a malignant change. Novak[24] and Bailey[25] agree with this principle.

The diagnosis of the average case of cervical cancer is easy because 90% are well established grossly when they are seen. The diagnosis of the others hinges on the microscopic appearance and in 2.5% of all cases is difficult.

The grossly suspicious cases are those in which there is a small granular raw area which bleeds readily when wiped with cotton and, the next stage, where this surface shows a tendency to sprout like vegetative growth. Biopsy should be done on such tissues. These conditions are also found in benign cases and both Novak and Pemberton and Smith feel that the expert in gynaecological pathology is better equipped to make the microscopic diagnosis because a large experience in examining slides of cervical tissue with all its tremendous variety of changes is essential. Biopsy on the cervix is not dangerous if the desired piece of tissue is cut out with a sharp knife and the wound immediately cauterized with a fulgurating needle or actual cautery.

There are some important points in the diagnosis of cancer of the body of the uterus. This is a glandular cancer occurring in the endometrium. It usually appears after the change of life but in 25% is found at or before 45. Inspection and palpation are of no value in the diagnosis because the uterus and pelvis may seem quite normal. Curettage with microscopical examination of the curettings is the only method of diagnosis except to the expert gynaecologist, who usually can make it cor-

rectly from the age, history of the patient, and gross appearance of the curettings[24]. Before the menopause it must be differentiated from benign hyperplasia of the endometrium.

After the menopause bleeding may be due to cancer of the cervix or fundus, senile inflammation of the vagina and cervix, polyps of the cervix or fundus, and cancer of the ovaries or tubes. Cancer of some type will be found in nearly 50%. Only a careful examination under anaesthesia will give the correct diagnosis in many cases and in any case one must rule out the malignant causes.

The treatment of cancer of the cervix may be said to have crystallized in favor of the use of radium rather than operation in spite of occasional reports such as Petersen's[27] who advocates hysterectomy in early cases which are good surgical risks. He follows operation with radium. He also reports 27% of 5 year arrests in 70 inoperable cases treated with radium.

There are many reports on radium treatment but Heymann's[28] is the most complete. Of 737 cases there were 23% of 5 year arrests. One hundred and eighty-eight of them were so-called operable cases and of these 43% showed 5 year arrests. Operative statistics have rarely shown any better results and, besides, have a mortality of 10% while radium has a negligible one. Heymann[29] also collected the statistics from many clinics and found a general average of 20% of radium cures and the same with operation so he feels that there is no evidence that operation is better.

Ward[30] reports the statistics from the Women's Hospital of New York on radium treatment in 154 cases showing 23.1% of 5 year cures while 32 of these, in which the disease was confined to the cervix, gave a 53.1% 5 year result.

The technique of treatment varies in different clinics. Some give one large dose in a day or two and no more unless a recurrence appears. Others give moderate doses at intervals of a few days or weeks until the maximum amount that is desired has been given. The dosage is reckoned by multiplying the number of milligrams of radium, or its equivalent in emanation, by the number of hours it is applied, expressing the result in so many milligram hours. The usual total dose is from 5000 to 8000 milligram hours. A salt of radium in tubes or needles, or emanations collected in tubes, needles, or small "seeds" may be used. These may be placed against the growth or embedded in it or combinations of the two used. Many men give x-ray treatment along with radium.

An interesting development is that reported by Donaldson[30]. He uses radium locally in the cervix and six weeks later opens the abdomen to remove the iliac glands and to insert radium needles in the broad ligaments from above. Then 7 days later the abdomen is opened again to remove the needles. This is very logical treatment which may prove to be important.

Cancer of the fundus is best treated with operation because the application of radium is blind and metastases in the ovaries, tubes, and peritoneum are more surely reached by surgery. The fundus lies free of vital structures and a simple complete hysterectomy is all that is required, with excision of the tubes and ovaries. Sixty per cent. or more of 5 year cures have been reported for many years and Stacy[32] confirms this by finding 63% of such.

Heymann[29] has treated 46 cases with radium and reports 43% of 5 year cures. In general however it is better to reserve radium for the poor surgical risks.

The treatment of cervicitis is the title of a number of articles[33, 34, 35, 36, 37]. Most authorities agree that amputation or a plastic operation of some type is the best treatment where the cervical canal is lined with cysts. Masson[36] feels that the cautery can accomplish as much as operation. The cautery is advised for the simpler cases especially the erosions of the outside, and most of them can be treated in the office without an anaesthetic. The knife cautery is used by most but Baker[37] has used the Post cautery with good results. Chaffin[34] advocates the fulgurating needle and Helvestine injects a 2% solution of Mercurochrome 220 into the diseased tissue. It is apparent that cervicitis can be cured by relatively simple measures and it is important because it concerns the prevention of cancer and the relief of an irritating discharge. Most people will not agree with Masson that the general health is not affected to any extent by the discharge.

Reading and attempting to analyze the literature on the ovarian hormone leaves one's mind in a state of chaos. A simple description of what has been thought and done will be attempted. Fundamentally there is no doubt that the ovary produces an internal secretion which controls menstruation because removal of the ovaries causes the menopause. It is probable that the secretion is manufactured in the developing follicles and corpus luteum because radium or x-ray treatment cause the destruction of such follicles with amenorrhoea. Also resection of the follicle bearing area of the ovaries in menorrhagia results in the return of the normal menstrual cycle. It is probable that there are two secretions having opposite effects, the one we have spoken of which causes menstruation and another which prevents it. The latter is thought to be manufactured by the corpus luteum because the corpus luteum occurring before pregnancy is larger and persists longer than the usual one. Further if such a corpus luteum is removed during the early months of pregnancy a miscarriage with the reëstablishment of menstruation occurs.

The internal secretion is also essential for the normal development of the female genitals and

general physique for if the ovaries are removed before puberty or before growth is attained, for instance the age of 20, complete feminine characteristics are not acquired. (See also the part of this article dealing with transplantation of ovarian tissue.)

The principal objective of investigators has been to obtain the actual substance secreted by the ovary. This has been approached in two ways, one by making extracts of the ovary or parts of it and the other to try and find it in the circulating blood.

At first extracts were made from ovarian tissue as a whole, from corpora lutea alone, and from the tissue without the lutea. Ovaries of sows were largely used and it was thought for a time that those from pregnant animals contained more hormone than others but that idea has been given up.

Now attention is concentrated more on extracts of the fluid obtained from the follicles and of corpora lutea. If such a substance could be found it might be used therapeutically to relieve menorrhagia or amenorrhoea or both and, besides, might be beneficial in the many cases of undeveloped genital organs with dysmenorrhoea and sterility.

First a test for the presence of an ovarian hormone had to be developed and this was done by Allen and Doisy[42]. They found that smears from the vagina of the castrated rat or mouse consisted largely of leucocytes, while smears taken from the normal rat or mouse during estrus consisted largely of desquamated epithelium. Therefore if a potent extract from the ovaries of animals were injected into a castrated rat or mouse the smear characteristic of estrus should be found at some time later. If it were not potent, it would not affect their genital organs. This was found to be true for they injected extracts of the fluid obtained from follicles into castrated rats and examined the vaginal discharge at intervals, finding that there was a gradual change from a leucocyte content to a squamous epithelium and mucous content by the end of 48 hours. This investigation has been confirmed by many others including Frank[43], Laqueur[44], and Loewe.

A quantitative test has been worked out according to the amount of hormone needed to produce estrus in a castrated rat of a standard weight.

It is evident that the ovary does produce a hormone, that it is manufactured in the follicle, and that its presence can be confirmed by experiments on animals. The methods of extracting it are complicated, vary according to various authorities and are too scientific to cite in this article. Frank's book, "The Female Sex Hormone" contains a complete description of his and other methods for those interested. Some are so certain that they have found the actual hormone that they have taken out patents on the process from as far back as 1915 to the most recent by Doisy, this year. These are taken out, of course, not to exploit the process but to ensure a standard preparation as was done with insulin. So far mass production has not resulted in results comparable to laboratory experiments. The actual chemical formula of the hormone has not been substantiated.

Frank attacked the subject from another angle, that of trying to find the hormone in the circulating blood of humans and he offers good evidence that he has done so. This was described in the last "Progress in Gynaecology" but should be given again for completeness. He takes 40 c.c. of blood from a vein and extracts it by a fairly complicated method which leaves a residue. If this is injected into the castrated rat, estrus occurs if the hormone is present. Many experiments have given the following deductions. The amount of hormone in the blood is low until about 7 days before the onset of menstruation. He calls this the threshold amount. In the seven days before menstruation he finds a rise in the content in the blood which rapidly drops to the former level during and just after the menstrual flow. Menstrual blood on the other hand contains 5 or 6 times as much as the circulating blood. Further he has found that the hormone is excreted in the urine, feces, and bile. Also, after the first 6 to 8 weeks of pregnancy, there is a large amount of the hormone in the blood during the rest of it.

This work has been corroborated by Hirsch[45], Smith[46], and Fels[47]. Janney[48] did not have as successful results but Frank thinks it must be due to a variation in technique.

The clinical application of the drugs produced and called ovarian hormones results in the most diverse opinions of their efficacy. Frank tested most of them on laboratory animals and found they had little or no potency. He has no faith in their usefulness. Rubin[49] has tried many of them in cases of sterility who complained of oligomenorrhoea, delayed and irregular periods. He could observe no real benefit from their exhibition, feeling that general medical care did more good.

Novak reports apparent results sometimes. He advanced the theory that they should be used in sequence as nature does. That is the extract of the liquor folliculi should be employed during the intermenstrual period and a shift should be made to corpus luteum extract when that body theoretically begins to function, i.e., a few days before menstruation is due, and the cycle repeated.

The correct dosage is unknown but large amounts may be given without detrimental action so it is wise to start with a small amount and gradually increase.

It is doubtful if oral administration is of any value. The action of the digestive fluids on the drug is not known. Many believe that the liquid extracts for subcutaneous injection are much more effective. Frank thought they were

in the laboratory but also that they were unstable, soon lost their potency.

The preparations put up in oil are better than the aqueous ones but they cause pain on injection and may form granulomata. Patients rebel against this method after a few treatments.

Elsner[50] says he has had some success in amenorrhoea by giving "Hormovar" subcutaneously. Joseph[51] reports relief of amenorrhoea, menopause symptoms, and ovarian dysfunction with "Folliculin" injections. Laqueur and deJough[52] have a water soluble hormone called "Menformon" which they think is potent but have not tried enough yet to give its clinical value. There are other preparations also such as "Amniotim", "Estogen", "Sistomensin", and "Progynon".

It seems apparent that we must still wait for clinically useful drugs which will stimulate the genital system or act as substitutes for the internal secretion of the ovary.

REFERENCES

1 Deutsche med. Wchnschr. 2:1927.
2 Am. J. Surg. 6:648.
3 Deutsche med. Wchnschr. 54:1667.
4 Am. J. Obst. & Gynec. 16:701.
5 Am. J. Obst. & Gynec. 16:552.
6 Roentz. 22:207.
7 Am. J. Surg. 6:648.
8 Surg., Gynec. & Obst. 50:588.
9 Am. J. Obst. & Gynec. 17:848.
10 Surg., Gynec. & Obst. 49:642.
11 Am. J. Obst. & Gynec. 16:867.
12 Illinois M. J. Nov. 1928.
13 Am. J. Obst. & Gynec. 16:461.
14 Surg., Gynec. & Obst. 49:433.
15 Deutsche med. Wchnschr. 55:1304.
16 Proc. Roy. Soc. Med. Lond. 22:1441.
17 Am. J. Obst. & Gynec. 17:806.
18 J. A. M. A. 42:1244.
19 Am. J. Obst. & Gynec. 18:472.
20 South. M. J. 22:475.
21 Surg., Gynec. & Obst. 48:248.
22 South. M. J. 21:832.
23 Am. J. Obst. & Gynec. 16:870.
24 J. A. M. A. 92:869.
25 Surg., Gynec. & Obst. 50:513.
26 Am. J. Obst. & Gynec. 17:165.
27 Surg., Gynec. & Obst. 49:37.
28 Proc. Roy. Soc. Med. Lond. 22:801.
29 Strahlentherapie. 29:407.
30 Am. J. Obst. & Gynec. 17:1.
31 Brit. M. J. 1:844.
32 Surg., Gynec. & Obst. 49:43.
33 Am. J. Obst. & Gynec. 17:841.
34 Am. J. Surg. 1:56.
35 Am. J. Obst. & Gynec. 16:624.
36 Am. J. Obst. & Gynec. 16:348.
37 Am. J. Obst. & Gynec. 19:548.
38 Northwest Med. Feb. 1929.
39 Deutsche med. Wchnschr. 55:101.
40 Am. J. Obst. & Gynec. 16:793.
41 Surg., Gynec. & Obst. 49:647.
42 J. A. M. A. 81:819.
43 J. A. M. A. 87:1719.
44 Physiol., Path. in Therap. 2:133.
45 Arch. J. Gynak. 133:173.
46 Bull. Johns Hopkins Hospital. 41:62.
47 Klin. Wochuschr. 6:1806.
48 Arch. of Surg. 18:1241.
49 Am. J. Obst. & Gynec. 18:603.
50 Munchen med. Wchnschr. Jan. 25, 1929.
51 Deutsche med. Wchnschr. 55:1044.
52 J. A. M. A. 91:1169.

NEED FOR CANCER MORBIDITY STATISTICS*

By Francis Carter Wood, M.D.

To a great extent the only available large scale statistics on cancer are those based on death certificates. These possess, as everyone knows, certain uncorrectable errors due to lack of accuracy in the primary documents. Such cancer death records, even with all possible corrections, are of but little value in the practical evaluation of the results of treatment, or lack of treatment, for any given individual with cancer; nor will any possible increase in accuracy of ordinary death records as at present made furnish such information.

The reports of the U. S. Bureau of the Census can rise no higher than the source of information, which is a death certificate. That these records may err by some 30 or 40 per cent. may seem astonishing to statisticians, but not to pathologists. The only method of obtaining correct statistics is the basing of all diagnoses on autopsies. With the present attitude of a large proportion of the population, this is obviously impossible, and unfortunately even in so advanced a country as Switzerland which has reached in all probability an approximate maximum rate for cancer in a white population, that is, some 125 to 130 per 100,000, there has been a recent check placed on autopsies. Unquestionably therefore the Swiss cancer rate will fall in the future.

These facts are also reflected in the great differences which exist between the cancer death rates in the larger cities with high grade hospitals, and those of the rural districts.

As I have said, the statistical analysis of deaths cannot rise higher than the accuracy of the certification by the physician; so the country's cancer death rate is a reflection of the diagnostic accuracy, or rather inaccuracy, employed in making such reports. To the layman it may seem strange that a patient can die with cancer and yet have no symptoms of the disease; yet every pathologist knows that this is not only possible, but not infrequent. Autopsies show that unquestionably a large number of patients die with cerebral, pulmonary and abdominal carcinosis in which no diagnosis of the disease is made.

The constantly increasing crude rate in the United States is admirable evidence that the ability to cure the individual patient is so small that it makes no impression on the general trend of the disease, but when it is realized that only one-fifth of the cancer cases in a large city that apply to a general hospital are in a sufficiently early stage to warrant treatment for the cure of the disease, it will be immediately realized that it is not surprising that the best modern treatment has had no effect on the disease. To say that 20 per cent. of the patients who enter a hospital are operable is certainly a very optimistic exaggeration of the conditions applying all over the country.

In rural districts practically no cases come in time for curative treatment. This situation is due in part to the extreme difficulty of the diagnosis of the disease already referred to, in part to the gross ignorance of the patient, and in part to the lack of modern training of a considerable proportion of the medical profession. Again, the activities of quacks, mental healers and others who criticize the methods used by the medical profession play a part; and often such irregular healers urge patients to follow a course quite different from that advised by the physician.

*Extract of a paper published in the *American Journal of Public Health*, January, 1930, and reprinted here in part.

Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 16241

NUMBNESS OF THE LEGS

MEDICAL DEPARTMENT

A married American woman thirty-six years old came to the Emergency Ward March 24 complaining of numbness and shrinking of the legs of five days' duration. The history was given by her husband, who was exhausted and in tears and frequently made contradictory statements.

Since the first of January she had been growing weaker and more irritable and losing weight, eight pounds in all. Her skin had grown yellow. For the past three weeks she had had a severe cold in the head. A week before admission she began to have pain over the left side of the front of the chest and abdomen. She went to bed. The following night she was seized with sudden momentary, very severe pain in the left side of her abdomen. The following day she felt fairly comfortable. Four days before admission she was seized with "terrific" pain in her right leg from the hip to the toes. The entire leg became blanched. Superficial sensation was practically absent. Massage and hot compresses had no effect. The foot assumed an equinovarus position. Within thirty-six hours the skin above the knee had regained its color, but that below the knee continued to be white and the structures somewhat shrunken. There was a dull ache in the upper thigh and sharp pain below the knee centering in the ankle, occurring every two or three minutes and lasting twenty seconds. March 21 just after midnight she was awakened by pain which began near the left hip. Within an hour it had reached the foot. This pain was not so severe as that in the right leg. The skin became blanched and the leg smaller in size. Within a few hours the pain was localized to the ankle, where it had remained. Within the past few days she had become unresponsive and recognized her family only after considerable pause. It was now necessary to speak loudly in order to gain her attention. For two days her urine had been blackish red. Since the onset of the illness she had complained several times of pins and needles sticking in her fingers.

At twelve years she had rheumatic fever. Since that time she had had dyspnea. For the past three years this had grown much worse. She had had no cough or edema. Eleven years before admission she had panhysterectomy because of a tumor on the uterus. Following this she had "congestion" of the lungs. She was in a hospital thirteen weeks. She had frequent hot flushes.

No further history was obtained.

Clinical examination showed a woman lying flat on her back in no respiratory distress, moaning and looking acutely ill. Face flushed. Skin pale. Little if any cyanosis. Throat rather dry. Apex impulse of the heart localized. Left border of dullness 11 centimeters to the left, 3.5 centimeters outside the midclavicular line. Right border of dullness 4 centimeters to the right. Supracardiac dullness 4.5. Sharp first sound. Pulmonic second sound much accentuated. A long rumble all through diastole. At the second and third left interspaces a short high-pitched diastolic whiff. Aortic area clear. Pleuropericardial friction over base. Pulses and arteries normal. Blood pressure 130/70. A few fine crackles below the angle of the left scapula. Slight resistance in the right upper quadrant. Edge of the right kidney palpable. Slight right costovertebral tenderness. A low midline scar with hernia. Both lower extremities cold and slightly cyanotic to an area 10 centimeters below Poupart's ligament, with a rather sharp line of demarcation of temperature. Femoral artery palpable on the right, not on the left. Slight edema of both legs below the knees. Pachon oscillometer showed no pulsation in either lower thigh. No sensation above midcalf in either leg. Ankle jerks not obtained. Bilateral toe drop. Pupils slightly irregular, otherwise normal. Rectal examination negative.

At admission temperature 103°, rectal, pulse 120, respirations 22.

Amount of urine not recorded, orange red, specific gravity 1.018, a trace of albumin. Sediment loaded with leukocytes, 5 to 10 red cells (not a catheter specimen). Blood: hemoglobin 75 to 80 per cent, reds 5,170,000 to 4,550,000, 26,000 to 28,000 leukocytes, 94 to 97 per cent polynuclears, some central achromia, numerous smudges, two smears otherwise normal. Hinton negative. Blood cultures: March 24 no growth in one flask, bacillus subtilis in another; March 25, no growth in either flask.

The patient was kept comfortable with morphine. She sweat profusely and looked desperately ill. The legs were put under a cradle with dry heat. March 25 she sank gradually. Two surgical consultants reported that she was in no condition for operation. She had distention not relieved by atropin, a rectal tube or enema. In the afternoon she passed through the rectal tube two ounces of bloody material showing a very strongly positive guaiac. Her pulse was now 120 and weaker, the temperature 103°, respirations 20. That night she died.

Clinical Discussion

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

The rheumatism and the presumable rheumatic heart disease which is suggested as the cause of dyspnea for three years seem to me the most important points to start with. Then we get this history of what sounds like embolism first in one leg and then in the other. The symptom I do not remember seeing before in embolism is that the leg gets smaller instead of getting bigger. I cannot make anything of that. There is a form of dry gangrene in which the affected part shrinks as well as changes in color. There is nothing said here about gangrene; there was nothing except blanching and anesthesia. I never knew a leg to get smaller, and I do not know why it should. Nevertheless the sudden onset of this pain in the leg associated with blanching and anesthesia certainly suggests embolism from a cardiac lesion with thrombi in the left side of the heart.

Her skin is said to be yellow. That does not suggest jaundice. More probably it is anemia. I look ahead to see if there is anemia and do not see anything to suggest it. The yellowness probably is not suggestive. We think of anemia as the cause for another sort of embolism and of the sensory symptoms that she has. They might be due to tabes, but tabes would not produce the brain symptoms she has.

NOTES ON THE PHYSICAL EXAMINATION

The low midline scar is where she had the hysterectomy presumably.

There does not seem to be any real shrinking of the legs.

I do not identify "smudges" with blood morphology. I suppose they mean "shadow cells," degenerated cells.

What were they looking for when they took those blood cultures? Bacterial endocarditis. The heart seems to be throwing off emboli. She has fever, so it might perfectly well be bacterial endocarditis, which in many cases shows up in the blood.

DIFFERENTIAL DIAGNOSIS

The examination points to the presence of a heart lesion which is strongly suggestive of mitral stenosis, to the presence of what looks like bilateral embolism in the legs which I suppose was arterial and not venous, to the presence of abdominal distention and the passage of blood from the bowel, which suggest that the embolic thrombus has got up higher than the femoral, perhaps into the abdominal aorta or its branches. The mesenteric artery might be one of those affected. If these deductions from the record are correct we naturally guess that there was a thrombus in the left auricular appendage of the heart and that pieces of that have broken off and gone into the leg arteries.

I have said nothing about the brain. I do not think that embolism of the leg by itself is sufficient to account for so bad a cerebral condition. We have to suppose some lesion in the brain. On the basis of my other suppositions the probability is embolism with softening, though we have no suggestion of a localization. I cannot think of any neurological lesion, any disease in the spinal cord or the peripheral nerve system that could cause these symptoms. If she had an acute myelitis or a vascular lesion of the cord she ought not to have diminished ankle jerks or toe drop. She ought to have increased ankle jerks and Babinski. I do not think I can go any further.

May we know the clinical diagnoses?

Dr. Tracy B. Mallory: Rheumatic heart disease with mitral stenosis and insufficiency; aortic regurgitation; subacute bacterial endocarditis (?); splenic, renal, right femoral and left iliac emboli, with beginning gangrene of the legs; mesenteric thrombosis.

Dr. Cabot: Why they say aortic insufficiency I do not see. There was a slight diastolic whiff along the left border, but that is common in mitral stenosis without any aortic lesion. There was nothing in the pulse to suggest an aortic lesion. The diagnosis of splenic emboli goes back to the pain in the left side of the chest and over the region of the spleen. Splenic emboli are so common that I think that diagnosis is very probably correct here. I should have thought of it. I do not remember that we had enough evidence of blood in the urine to make us have any definite evidence for renal emboli. We had some red corpuscles, but without a catheter specimen that is not enough.

A Student: Is a temperature of 103° high enough for bacterial infection?

Dr. Cabot: It certainly makes us think of it. The difficulty is that so near death, and especially in a person who we have reason to suppose was throwing about emboli, one sees protein fevers from the presence of abnormal protein in the blood. I do not see why this is not that type of blood. We should think of bacterial endocarditis. She had no skin emboli apparently. We have a very short course of the disease so far as the history is correct. We have not the complete picture of bacterial endocarditis, but I cannot rule it out. If the skin has been growing yellow for three months we can say she was really growing sick for three months, and three months is a perfectly proper length of time for bacterial endocarditis. We have no evidence that any of the emboli are septic. I do not know that we can expect that. They might not show any evidence of sepsis. Another point is the high leukocytosis. In so high a leukocyte count, 94 to 97 per cent polynuclears does make a very high total count of polynuclears. That sometimes goes with bac-

terial endocarditis; often not. Sometimes we have a low leukocyte count in that disease. The diagnosis is between bacterial and chronic deforming endocarditis. I cannot say definitely why I have the impression it is not bacterial.

DR. GEORGE SHAMBAUGH: If she did not have bacterial endocarditis, but simply a mitral heart, would it not be unusual to have so many emboli all at once within a few days or weeks and no history of previous emboli?

DR. CABOT: That may be true. Of course it is not at all unusual to have emboli. But we do not often see so many in so short a time. I am inclined to think you are right. So far as I can remember most of the embolism in simple mitral stenosis is single, without repetition within a short time. Presumably besides the leg emboli there were others higher up, perhaps in the spleen, perhaps in the abdomen, perhaps in the brain. I think you made a good point about there being so many in a short time, and I guess you are right about its being more common in bacterial than in chronic deforming endocarditis. Did they make a diagnosis of bacterial endocarditis?

DR. MALLORY: They questioned it.

DR. CABOT: I do not know whether to make that diagnosis or not.

CLINICAL DIAGNOSES (FROM HOSPITAL RECORD)

Rheumatic heart disease with mitral stenosis and insufficiency.
Aortic regurgitation.
Subacute bacterial endocarditis (?).
Splenic, renal, right femoral and left iliac emboli, with beginning gangrene of the legs.
Mesenteric thrombosis.

DR. RICHARD C. CABOT'S DIAGNOSES

Rheumatic heart disease; mitral stenosis.
Thrombus in the left auricular appendage.
Emboli in the legs, the abdomen and possibly in the brain, with softening.
Possibly acute endocarditis or possibly subacute bacterial endocarditis.

ANATOMIC DIAGNOSES

Rheumatic heart disease; mitral stenosis.
Acute endocarditis, probably not bacterial.
Thrombus in the left auricle.
Emboli in the left common iliac artery, the right femoral artery, the spleen, the kidneys and the small intestine.

PATHOLOGIC DISCUSSION

BY TRACY B. MALLORY, M.D.

The autopsy showed a marked mitral stenosis, and there was an acute endocarditis. I do not think it was a bacterial endocarditis. It is difficult to know where to draw the line between bacterial and rheumatic endocarditis, and I doubt if it can always be done anatomically any more than clinically or bacteriologically. In this case the vegetations present were minute, bead-like, and warty, instead of the shaggy vegetations that one finds in so-called bacterial endocarditis. I think she had simply a flare-up of her rheumatic fever in all probability. There was a thrombus in the left auricle and I think that was the source of the various emboli. There was one in the left iliac artery and one in the right femoral. There were infarcts of the small intestine which had caused necrosis of the mucosa. The intestines were filled with blood, but the process had not yet extended outward through the intestinal wall and there was no peritonitis, which would have occurred in a few more hours.

DR. CABOT: Was the brain opened?

DR. MALLORY: No.

A STUDENT: Would microscopic section show that the vegetations were of the Aschoff type or other type?

DR. MALLORY: No; it would simply show whether there was fibrin present. It is always present in bacterial endocarditis cases and occasionally present in rheumatic endocarditis cases. The vegetations never look much like Aschoff bodies. You get those in the muscle and not on the valve.

DR. CABOT: I think the honors are fairly easy between the acute bacterial hypothesis and the other. It is pretty definite that not all the emboli came from those tiny vegetations. We can put it down as proved that it is possible to get many emboli from a non-bacterial endocarditis within a short time. We also account for our leukocytosis and fever on the ground of acute infection.

I do not think anyone could have thought of a chronic thrombotic process throwing emboli and an acute process not throwing emboli. That is too complex for anybody.

Was there any evidence of shrinking of the legs?

DR. MALLORY: They were distinctly swollen.

CASE 16242

HEMOPTYSIS AND FOUL SPUTA

MEDICAL DEPARTMENT

PRESENTATION OF CASE

DR. CHARLES L. SHORT*: A thirty-four year old Portuguese housewife entered April 4 complaining of pain in the left side of fifteen months' duration and productive cough for twelve months.

Fifteen months before admission, the day after exposure to bad weather and two months after breech delivery of her sixth child under ether anesthesia, she began to have aching pains in her back and extremities. That evening she

*Senior interne on the West Medical service.

had a severe shaking chill lasting half an hour. After going to bed she had less severe chills. Then she began to have sharp cutting pain in the lower left chest in front and laterally. The pain was worse on deep respiration. Pills and heat gave no relief. On the fifth day she had paroxysmal unproductive cough which was relieved by medicine in a few days. She gradually improved and after a month was about as well as before. A year before admission she had a chilly sensation and later coughed up five or six mouthfuls of dark green, foul smelling sputum followed by hemoptysis of about half a cup of bright red blood. The pain recurred, accompanied by fever but without cough. In a week these symptoms cleared up; but she did not regain her strength. Eleven months before admission she had multiple cauterizations and later lamp treatments. The cough recurred, with pus and one to two ounces of blood. Ten months before admission she had occasional attacks of pain. After a severe attack of pain nine months before admission she coughed up foul sputum but no blood. A week later on going to a hospital she had severe hemoptysis. The report from the hospital is as follows, "Lungs: the whole left front and back were definitely dull, with diminution of all sounds. There were scattered râles throughout the chest, but no areas of bronchial breathing. Tactile fremitus diminished. Temperature 100°." The X-ray examination showed cloudiness in the left lower quadrant of the chest. The impression was thickened pleura or congestion with tuberculosis as the favored diagnosis and new growth as the second. After a month of inactivity she gradually improved. She felt strong and even increased her weight. Five months before admission in the middle of the winter she lost weight, strength and appetite. The pleural pain recurred, foul sputum was again raised and she ran a temperature. Three months before admission she entered a sanitarium, where she remained for two weeks. Examination there showed dullness in the left lower quadrant of the chest with diminished sounds and coarse râles above. A sputum examination was negative for tubercle bacilli. X-ray examination there showed cloudiness in the left lower quadrant "consistent with new growth". No fluid was obtained. She ran a temperature of 99° to 101° while in the sanitarium. After leaving her symptoms continued about as before. She had continuous pain in her side with intermittent momentary pain in her left shoulder. Her cough was more productive than before. She now raised four cupfuls of sputum. She was finally sent in to this hospital.

There was no history of exposure to tuberculosis. The past history was negative except for typhoid fever at sixteen. She had always been strong and healthy.

Clinical examination showed a poorly nourished, pale woman looking very ill. Teeth in good condition; several new gold fillings. Tonsils ragged and cryptic. Right chest more prominent in the back and expanded better than the left. Compression of the left lower chest painful. The chest was dull to flat in the left lower region from midscapula down, with diminished signs. Bronchial breathing, egophony and scattered moist râles in the upper portion of the dull area. The heart was not displaced. It was somewhat enlarged. Sounds loud. A blowing systolic murmur all over the precordium extending up into the supracardiac space. Aortic second sound accentuated, very loud and snapping. Fingers clubbed.

Temperature 101°. Pulse 110. Respirations 30.

Urine negative. Blood: reds 4,000,000, hemoglobin 50 per cent, 12,000 leukocytes. The smear showed secondary anemia. Sputa negative for tuberculosis, purulent, showed a few Gram-negative intracellular bacilli, no spirochetes. Hinton negative.

The X-ray impression was consolidation of the left lower lobe, cavity formation and probably pleural effusion below.

A chest tap was done in the ninth interspace. No fluid was obtained. The patient continued to run a septic temperature. She raised eight to sixteen or twenty ounces of sputum daily. The Thoracic Clinic thought the diagnosis was probably lung abscess and empyema. On April 24, two weeks after admission, there was little change. Postural drainage gave only slight results. Bronchoscopy was done. No granulations were seen, but everything was bathed in pus. Lipiodol was injected and observed under the fluoroscope to fill the main bronchus and run back into the trachea. None drained into the abscess cavity. Following bronchoscopy the temperature came down somewhat and there was much less coughing for four or five days. Then the ups and downs of fever returned, as before bronchoscopy. It was believed that frequent bronchoscopic evacuations would be the best course to pursue. The bronchoscope was passed on May 7 and again on May 11. Not more than three ounces of pus was obtained each time, and no new findings, but she was better after each bronchoscopy, though she was very reluctant to have them and apparently suffered extreme discomfort during them. On May 14 at eleven o'clock in the evening the nurse heard a severe cough and cry and found the patient having a massive hemoptysis. When the interne arrived a few minutes later she was pulseless, but still showed slight movement. She was given adrenalin into the heart without effect.

Dr. George W. Holmes: The X-rays were taken over a period of about a month. They show constant dullness in the left lower chest which did not change much in density or in the size of the shadow. There is an obvious cavity in this upper portion. The rest of the shadow looks like consolidation around the cavity. The absence of any retraction of the heart or medias-

tinum is more like abscess than tuberculosis with cavity.

DIFFERENTIAL DIAGNOSIS

BY RICHARD C. CABOT, M.D.

The early history of this patient's troubles suggests pneumonia, bronchiectasis or pulmonary abscess. The year before admission the possibility of pneumonia could be ruled out when it ceased to be probable that she was suffering from pulmonary abscess, perhaps with gangrene of its walls. The possibility of a foreign body or cancerous obstruction in the bronchus must however be considered even though there is no history of having swallowed a foreign body and even though she is younger than the average cancer patient.

The physical signs seem consistent with any of these diagnoses. Tuberculosis seems much less probable, and it should have been possible to exclude this altogether by careful and repeated examinations of the sputum. Such foul sputum is rare in tuberculosis, and the history of sudden improvements and relapses is much more like an abscess with or without a foreign body in the bronchus.

The bronchoscopic examination, if efficiently done, would probably exclude cancer or a foreign body, and the lipiodol injection supports this conclusion and apparently shows that the abscess cavity is shut off from the main bronchus.

The death is obviously from hemorrhage.

Between a single abscess cavity and a lobulated one verging into bronchiectasis I see no way to decide on the basis of the facts before us. Most cases of chronic abscess become almost or quite indistinguishable from bronchiectasis and are accompanied by a great deal of interstitial pneumonia, so that Dr. Lord's term, bronchopulmonary inflammation, is on the whole the preferable one.

CLINICAL DIAGNOSES (FROM HOSPITAL RECORD)

Lung abscess.
Massive hemoptysis.

ANATOMIC DIAGNOSES

Chronic bronchopulmonary suppuration, left lung.

PATHOLOGIC DISCUSSION

BY TRACY B. MALLORY, M.D.

The autopsy showed a very extensive process in the left lower lobe and the lower portion of the left upper lobe. It is rather difficult to know how to classify it. The trachea and the two primary bronchi were negative. On the left side there was considerable dilatation of the smaller bronchi which might fairly be called bronchiectasis. The entire area of lung involved showed extremely dense fibrosis with wide-scattered necrosis all through it and a great many cavities, each of which communicated with the dilated bronchi. Many of these cavities were lined with smooth epithelium; others were lined with granulation tissue. The appearance was more like bronchiectasis than the ordinary type of lung abscess. I am not sure that one can draw a hard and fast line between the two conditions.

One other point of interest is that we found at autopsy a large amount of blood in the bronchi of the unaffected side and none at all on the affected side. We interpreted that as meaning that in a violent inspiratory effort she had inhaled the blood into the right lung, which was the relatively normal one with which she could breathe well, rather than its meaning the blood actually came from that side. Running all through the affected area was a relatively large branch of the pulmonary artery. We were not able to demonstrate any actual point of perforation.

The origin of the condition is difficult to determine at this late date. I am inclined to connect it with the delivery of her last child. The onset of symptoms is too late for the usual inspiratory type of lung abscess but would fit very well with a septic infarct of the lung from some undiscovered area of venous thrombosis such as is very common in the puerperium.

ORDERS

April 4. Bed. Chest swathe. Fluids ad libitum. Russian oil half an ounce twice a day. Tuberculosis precautions (omitted April 7).

April 6. Postural drainage twice a day. Luminal grains iss at bed time; repeat once if necessary. Codeine grain ss s.c.

April 7. Luminal grains iss. Pills aloes and myrrh p.r.n. for constipation. Soft solid diet. Force fluids to 100 ounces a day. Individual precautions. Measure and record sputum. Send specimen of sputum daily to West Medical laboratory. Codeine grains ss every four hours during night for pain p.r.n.

April 9 to May 13. Daily orders for codeine grain ss by mouth, from one dose to every three or four hours p.r.n.

April 11. Gomenol one three minim pearl t.i.d.

April 13. High caloric, high vitamin diet with liver 200 grams daily. Brandy three-quarters of an ounce half an hour before meals. Porch in the sun as much as possible. Steam inhalations twice a day.

April 18. Iron and ammonium citrate crystals grain ss twice a day in one-half glass of warm milk.

April 20. Veronal grains v at bed time in hot milk.

May 5. Nourishing drinks between meals.

The New England
Journal of Medicine

SUCCESSOR TO
THE BOSTON MEDICAL AND SURGICAL JOURNAL

Established in 1828

Published by THE MASSACHUSETTS MEDICAL SOCIETY under the jurisdiction of the

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SUBSCRIPTION TERMS: *$6.00 per year in advance, postage paid for the United States, Canada $7.04 per year, $7.56 per year for all foreign countries belonging to the Postal Union.*

Material for early publication should be received not later than noon on Saturday. Orders for reprints must be sent to the Journal office, 165 Newbury Street.

The Journal does not hold itself responsible for statements made by any contributor.

Communications should be addressed to The New England Journal of Medicine, 165 Newbury Street, Boston, Mass.

WHAT IS THE RESPONSIBILITY OF PHYSICIANS WITH RESPECT TO THE BALLOT?

IN another column may be found a letter from Dr. Victor Safford with a motion which he hopes will be submitted at the next Council meeting of the Massachusetts Medical Society.

If it is advisable to adopt the motion, may it not be in order for the Council to add further features which would include such persons outside the classification of members of the General Court who are coming up for reëlection.

The attitude of a prospective new member toward health matters may be as significant as that of one with a legislative record.

Without presenting arguments pro or con, the motion introduces certain psychologic features. If adopted and put into action, it would be of interest to all who are concerned in matters relating to medicine and might stimulate some lukewarm voters to scrutinize the list of candidates with more care than is usually devoted to this public duty.

How far this information will create resentment on the part of candidates and their friends, the future will determine.

With the present unsound belief in the existence of a medical trust, any movements tending to promote an organized effort on the part of doctors in favor of a legislative program may be seized upon as a demonstration of such a body. A communication to all the forty-five hundred members of the Massachusetts Medical Society which would carry discredit to a member of the legislature, while it might convey interesting information would not be likely to promote cordial or open-minded reactions to any project endorsed by a committee representing the Society. If the committee should carry out the commission imposed by the motion the same discretion and diplomacy which has been evident in the past may be all that is desired. Of course men in public life expect more or less criticism but it is not always accepted with complacency or as a part of the game.

Whatever the Council or a committee may do every effort should be made to induce the voting physician to exercise his franchise after careful consideration of the relative qualifications of candidates for legislative honors.

THE PUBLIC HEALTH AND THE CHILDREN OF THE NATION

IN a remarkable address before the Massachusetts Central Health Council, Mr. H. E. Barnard recently gave an account of the work now in progress by government and voluntary agencies in dealing with the problems of childhood. In this issue an extract of the address appears.*

The scope of the paper is shown in the sentence: "Today 43,000,000 children under eighteen years of age are the hope and despair of the parents in our country."

Of this number more than twenty per cent. are in New England and in this section may be found institutions and agencies which are accomplishing remarkable results in dealing with the problems of childhood as a part of the state program.

The development of the White House Conference on Child Health and Protection with its subsections is given in considerable detail, all looking forward to the establishment of adequate federal and state public health administration augmented by efficient organizations in the three thousand counties in the country.

Broad and definite as these plans are, the results sought will be attained only through the impelling conviction that the best results can be secured through the intelligent coöperation of the people of the country.

Everyone interested in child welfare should become familiar with the agencies now in the field and lend full support.

The reading of the extract of Mr. Barnard's paper will arouse interest.

*Page 1151.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

CLUTE, HOWARD M. B.S., M.D. Dartmouth Medical School 1914. F.A.C.S. Surgeon, Lahey Clinic. Assistant Surgeon, New England Deaconess Hospital and New England Baptist Hospital. Address: 605 Commonwealth Avenue, Boston. Associated with him is:

ADAMS, HERBERT D. A.B., M.D. Harvard Medical School, 1929. Fellow in Surgery, Lahey Clinic. Address: 605 Commonwealth Avenue, Boston. Their subject is: "The Diagnosis of Borderline Hyperthyroidism." Page 1135.

BURLEY, BENJAMIN T. A.B., M.D. Harvard 1901. Visiting Neurologist, The Memorial Hospital and the Worcester City Hospital, Worcester. Consulting Neurologist, Holden Hospital and Louis Pasteur Hospital. His subject is: "The 1930 Type of Polyneuritis." Page 1139. Address: 19 High Street, Worcester.

GODDU, LOUIS A. O. Ph.G., M.D. Tufts 1905. F.A.C.S. Assistant Professor of Orthopedic Surgery, Tufts Medical College. Visiting Consultant in Orthopedics, Lakeville State Sanatorium for Bone Tuberculosis. Chief of Orthopedics at Woonsocket Hospital, Woonsocket, Rhode Island. Consultant Orthopedic Surgeon at Whidden Memorial Hospital, Everett. Orthopedic Surgeon-in-Chief at Roxbury Hospital and Clinic, Boston. His subject is: "Reconstruction of Elbow and Bone Graft of Rudimentary Ulna." Page 1142. Address: 510 Commonwealth Avenue, Boston.

HERTER, CHRISTIAN A. A.B. Harvard University. Chairman, Governor Allen's Welfare Committee. His subject is: "Address of Christian A. Herter at the Dinner of the Massachusetts Central Health Council." Page 1145. Address: 89 Broad Street, Boston.

HORWOOD, MURRAY P. B.S., M.S., Ph.D. Massachusetts Institute of Technology 1921. Associate Professor of Bacteriology and Public Health, Massachusetts Institute of Technology. Formerly lecturer in Bacteriology and Public Health, Boston University Medical School and in Hygiene, Tufts Medical School. His subject is: "The Value of the Tuberculosis Survey in Promoting the Public Health." Page 1147. Address: Massachusetts Institute of Technology, Cambridge.

BARNARD, H. E. B.S. New Hampshire College of Agriculture and Mechanic Arts 1899. Ph.D. Hanover College 1913. Chemist, New Hampshire State Board of Health 1901-05. Member White House Conference on Child Health and Protection. His subject is: "Extract from Speech Before the Massachusetts Central Health Council." Page 1151. Address in care of the Conference, Washington, D. C.

PRENN, JOSEPH. M.D. Tufts 1908. His subject is: "The New Inhaler." Page 1156. Address: 485 Commonwealth Avenue, Boston.

PEMBERTON, FRANK A. B.S., M.D. Harvard 1909. F.A.C.S. Assistant Visiting Surgeon, Free Hospital for Women. Consulting Gynaecologist, New England Deaconess Hospital. Instructor in Gynaecology, Harvard University Medical School. His subject is: "Progress in Gynaecology." Page 1157. Address: 198 Commonwealth Avenue, Boston, Mass.

The Massachusetts Medical Society

THE ANNUAL MEETING

NEXT Tuesday morning in Plymouth the Fellows will convene for the opening exercises of the annual meeting of the Massachusetts Medical Society.

The program is of unusual interest and will provide scientific and social features which will repay all for the time spent in attendance.

Members of doctors' families will be welcomed by the local committees.

The state and the local committees have coöperated in plans for an unusual opportunity to visit the historic region. If possible every member should show appreciation of the efforts to make this an unusual occasion.

Make plans to cover both days.

MISCELLANY

A VETERAN WHO LOST BOTH HANDS IN WAR APPOINTED AS POSTMASTER AT BELL, CALIFORNIA

The nomination by the President and confirmation by the Senate of Charles C. McGonegal for the postmastership at Bell, Calif., is a result of an outstanding effort to overcome a fearful physical handicap.

McGonegal lost both his hands in the War. He entered the competition under the Civil Service Commission for the Bell postmastership as one of eight competitors. After searching investigation, the Civil Service Commission certified him as one of the highest three eligibles, his business experience entitling him to third place.

The evidence gathered by the Civil Service Commission showed that in spite of the loss of his hands McGonegal was able to perform, by means of mechanical devices, all normal manual functions practically as well as anyone. The following is typical of the statements made by the persons interviewed by the Civil Service Commission:

"While he lost both hands in the War he can do anything as well as I can," the testator said. "He writes, and drives an automobile. He drives

an airplane. There is nothing I can think of that he cannot do, and he is strictly competent in all this."—*Bulletin U. S. C. S. Commission.*

This is an illustration of the powers of adaptation to the conditions of life by a courageous person.

WEEKLY HEALTH INDEX

Telegraphic returns from 65 cities with a total population of thirty million for the week ending May 31, indicate a mortality rate of 11.6 as against a rate of 12.8 for the corresponding week of last year. The highest rate (25.3) appears for San Antonio, Tex., and the lowest (3.4) for Yonkers, N. Y. The highest infant mortality rate (161) appears for Duluth, Minn., and the lowest for Albany, N. Y., Somerville, Mass., Waterbury, Conn., and Yonkers, N. Y., which reported no infant mortality.

The annual rate for 65 cities is 13.7 for the twenty-two weeks of 1930, as against a rate of 14.9 for the corresponding weeks of 1929.

Attention is called to the fact that all rates used in this summary are based upon *estimates* of population and hence are subject to revision when the final results of the 1930 census become available.

THE DIRECTORY, INC., FOR MOTHERS' MILK

Two different sets of triplets are now being fed on mothers' milk that comes from the Directory, Inc., For Mothers' Milk, 270 Commonwealth Avenue, Boston.

Miss Cornelia MacPherson, R.N., is the General Director of the organization.

Albert, Alfred, and Arthur Mendes, in the town of Tiverton, were the first triplets to be benefited by this diet and are doing very nicely. The second set has just seen the light of day and is in the Cambridge Hospital, which is located on Mt. Auburn Street.

The aim of the Directory for Mothers' Milk is the saving of infant life. While many pay for the service, it is not a profit-making project but a humanitarian effort. The value of its work is shown by the following endorsements which have been received by Mrs. Alvin F. Sartwell, the Vice-President, from Governor Allen and Dr. George H. Bigelow, Commissioner of Public Health.

Governor Allen's endorsement reads as follows:

> "Thank you very much for calling my attention to the work of the Directory, Incorporated. I am glad to be given this opportunity of expressing my hearty endorsement not only of its purpose but also of its administration.
>
> "Inasmuch as the question frequently is not one of cost but of complete inaccessibility of mothers' milk in emergencies it seems to me that the Directory, Incorporated, is something besides a charitable organization and deserves the fullest support of those who, financially able, have benefited from its service, as well as the aid and interest of the general public, who I am sure are always ready to heed the appeal of sick and needy babies.
>
> "With my best wishes for the continued success of your unique and splendid work.
>
> "Sincerely yours,
>
> "(Signed) FRANK G. ALLEN."

Commissioner Bigelow commends the work as follows:

> "I take pleasure in acknowledging the debt which the community owes to The Directory, Inc., for making available mothers' milk, particularly to sickly infants unable to obtain it in other ways. It is, of course, impossible to calculate the number of lives that have been saved in this way. When the need comes it is frequently not a question of money but a question of organization without which at any cost the need might well not be met. Also the Directory has done pioneer work in this field and its example has been widely followed elsewhere. Certainly it deserves wide public support.
>
> "Yours truly,
>
> "(Signed) GEORGE H. BIGELOW, M.D.,
>
> "*Commissioner of Public Health.*"

Mrs. John E. Thayer, Jr., is chairman of the 20th Annual Appeal for funds which is now being conducted by the Directory, Inc., For Mothers' Milk.

Mrs. Bayard Warren is in charge of the women interested in perfecting the dried milk process, and the President of the Directory is Mrs. Fritz B. Talbot.

OLIVER REA SCHOLARSHIP FUND

The directors of the New York Post-Graduate Medical School and Hospital have announced that practising physicians of Allegheny County, Pennsylvania, are to be given preference in the award of scholarship aid under the terms of the Oliver Rea Scholarship Fund. Mrs. Edith Oliver Rea, of Sewickley, Pennsylvania, is the donor of the fund, and, other things being equal, she desired that physicians from her home county be given priority in the awards.

The purpose of the fund is to promote advanced medical education and research in the United States, to stimulate and train teachers in medicine and surgery, and in other ways to increase efficiency in the practice of medicine and surgery. Special attention is to be paid to work in internal medicine, particularly the study of diseases of unknown etiology. Scholarships are also to be established to defray the expense in part or in full, of the tuition of physicians at the New York Post-Graduate Medical School and Hospital.

CLINICS AND PATHOLOGICAL CONFERENCES SPONSORED BY THE CHICAGO MEDICAL SOCIETY

The summer clinics sponsored by the Chicago Medical Society will be held at the Cook County Hospital from August 11 to 22 inclusive.

Beginning with the issue of May 24 of the *Chicago Medical Society Bulletin*, the pathological conferences conducted by Dr. R. H. Jaffee at the Cook County Hospital were inaugurated. According to N. S. Davis III, Secretary of the Chicago Medical Society, these conferences are becoming as well known as those of the Massachusetts General Hospital which are published each week in the *New England Journal of Medicine*. Those interested may obtain full information from the office of the Chicago Medical Society, 185 North Wabash Avenue, Chicago.

CORRESPONDENCE

INVITATIONS TO THE OPENING EXERCISES OF THE NEW ADMISSION AND ISOLATION BUILDING AT THE NORTH READING STATE SANATORIUM AND THE CHILDREN'S BUILDING AT THE LAKEVILLE STATE SANATORIUM

The Commonwealth of Massachusetts
Department of Public Health
State House, Boston

June 4, 1930.

Editor, *New England Journal of Medicine:*

Through the *Journal* I should like to extend an invitation to the physicians of the State who are interested to attend the opening of the new Admission and Isolation Building at the North Reading State Sanatorium on Monday, June 16, and of the new Children's Building at the Lakeville State Sanatorium on Tuesday, July 1.

Both of these additions were recommended in the first message of Governor Allen to the Legislature and, like the recent addition to the Pondville Cancer Hospital, are a part of His Excellency's welfare program. The speakers at North Reading will include His Excellency the Governor, Dr. Henry D. Chadwick now of Detroit, Dr. Frederick T. Lord, President of the Massachusetts Tuberculosis League, Mr. William N. Goodell, a member of the Executive Committee of the League, and Dr. MacCorison, Superintendent of the institution.

The North Reading Sanatorium is off the Reading-Andover Turnpike four miles north from Reading Square.

The schedule of the Lakeville meeting follows:

Opening Address, Governor Frank G. Allen.

Dr. Kendall Emerson, Managing Director of the National Tuberculosis Association, The Future of Tuberculosis Control.

Dr. Z. Boylston Adams, Consulting Orthopedic Surgeon, Lakeville State Sanatorium, Summary of What Has Been Done at the Institution.

Dr. Edward O. Otis, Honorary President of the Massachusetts Tuberculosis League and Professor Emeritus of Pulmonary Diseases and Climatology, Tufts College Medical School, Value of Such an Institution to the Practitioner.

Dr. Walter P. Bowers, Managing Editor, *New England Journal of Medicine*, The Control of Non-pulmonary Tuberculosis.

Dr. Leon A. Alley, Superintendent of the Lakeville State Sanatorium, How to Utilize the Services at Lakeville.

The institution will be open for inspection all day.

The Lakeville Sanatorium is on the Middleboro and New Bedford road, one mile south of Middleboro.

On both occasions the speaking will take place from eleven to one o'clock, following which a buffet luncheon will be served.

Yours truly,

GEORGE H. BIGELOW, M.D.,
Commissioner of Public Health.

THE PREVENTION OR MODIFICATION OF MEASLES

The Commonwealth of Massachusetts
Department of Public Health
State House, Boston

June 2, 1930.

Editor, *New England Journal of Medicine:*

Prevention or modification of measles by the use of adult whole blood has yielded results which are so encouraging that the Department would appreciate this opportunity when measles is prevalent to call the attention of physicians to the advantages of this method and the desirability of its use in small children.

Although the general fatality rate from measles is low, nevertheless in children under the age of three and those already somewhat debilitated it may run as high as five per cent. or more. Each year measles takes a heavier toll among small children than do automobiles. Furthermore, the control of its spread through the usual methods is often discouraging, except perhaps in delaying an attack until the child is somewhat older and more robust. The prevention of deaths and complications is therefore the most serious problem in measles.

The value of human convalescent serum in preventing or modifying measles is too well proved to admit of doubt but it is not feasible to supply physicians with a material so hard to obtain. On the other hand, it has repeatedly been shown that similar results may be obtained by the use of whole blood from a person who has had measles, no matter how remotely. In an urban population ninety-five per cent of all persons over twenty have had the disease.

In practice it is best to take the blood from one of the parents. Inasmuch as the injection is given intramuscularly preliminary typing is not necessary. About 20-30 c.c. of blood is drawn into a sterile syringe, the needle changed and immediately injected on the lateral aspect of the thigh of the child under the fascia lata. If desired 1 c.c. of a sterile 5% sodium citrate solution may be used in the syringe to delay clotting but if the injection be made

immediately it is not necessary. Distribution of the dosage to the two legs will eliminate much subsequent soreness.

For best results these injections should be given as early after the *first exposure* as possible and not later than the fifth day. In many instances a complete temporary immunity results; in the remainder measles may occur but in a much milder form.

It is the hope of the Department that the deaths from measles in Massachusetts may be greatly reduced by proper medical and nursing care of all cases, and by such passive immunization of known exposures under three years of age. The control of the measles death rate lies largely in the hands of the family physician, and in this endeavor we seek your coöperation.

Yours truly,
GEORGE H. BIGELOW, M.D.,
Commissioner of Public Health.

A PROPOSED MOTION TO BE CONSIDERED BY THE COUNCIL OF THE MASSACHUSETTS MEDICAL SOCIETY

15 Grosvenor Road, Jamaica Plain,
June 6, 1930.

Editor of the *New England Journal of Medicine:*

I am inclosing a proposition in the form of a motion which I would like to see considered by the Council of the Massachusetts Medical Society this year.

I will be unable to attend the meeting this year.

I have already written Dr. Greenough about it. Your recent editorial on State Medicine suggested my idea.

Yours sincerely,
VICTOR SAFFORD.

The motion is as follows:

It is moved that before October 15 of each year the Committee on State and National Legislation of the Massachusetts Medical Society shall cause to be placed in the hands of every Fellow of the Society such a summary of the personal antecedents and legislative record of every member (representative and senator) of the General Court who may be a candidate for reëlection as in the opinion of the Committee may assist the Fellows of the Society as citizens of the Commonwealth in determining the advisability of reëlecting members of the General Court who may be candidates for reëlection.

UNWARRANTED USE OF A NAME

June 5, 1930.

Editor, *New England Journal of Medicine:*

I wish to state my surprise on hearing that my name was used as an indorser of a petroleum investment project by one Frank S. Quinn of Tulsa, Oklahoma. I never received a copy of this announcement, but it was sent to me by a fellow physician. I am in no way connected with this project, and I have no knowledge of the business ability of said Frank S. Quinn. When I discovered the use of my name, I consulted an attorney who advised me that the only thing that I could do was to write to the above-named man and demand that he remove my name from any further announcements. I immediately wrote to him and demanded that he no longer make me the victim of unwelcome publicity.

Sincerely yours,
J. G. DOWNING, M.D.

RECENT DEATHS

MAGURN — DR. FRANCIS THOMAS LOUIS MAGURN died at the Soldiers' Hospital, Chelsea, as a result of shock attributable to war service, it was thought, on June 2, 1930, at the age of 62.

He was born in Charlestown, May 23, 1868, the son of Michael and Margaret (Murphy) Magurn. He attended the Charlestown schools and completed his studies at Harvard Medical School in 1895 and began his practice of medicine in his home district. He had a brilliant military record and took an active part in the civic affairs of his community. As Major Magurn, he was chief marshal of the famous Bunker Hill parade in 1896 and had the same honor in 1900 and nearly every year served in some way.

He was a Fellow of The Massachusetts Medical Society.

Always interested in military matters, he enlisted in 1887 in Company D, Ninth Infantry. Later he was with Company A, Fifth Infantry, and in May, 1890, was made captain of his old Company D. In September, 1897, he was appointed surgeon, with the rank of captain, and during the Spanish War was made major and attended the sick and those wounded in service. Major Magurn was first commander of the Colonel Fred B. Bogan Camp, U. S. W. V., and in 1901 became a member of the staff of Colonel W. H. Oakes of the Fifth Infantry. He leaves a sister, Miss Ella G. Magurn, with whom he had lived in Charlestown.

TULLY—DR. EDWARD JOSEPH TULLY, a Fellow of the Massachusetts Medical Society since 1891, died at his home in Fitchburg, May 31, 1930, aged 59. He was born in Lowell, June 3, 1870, obtained his premedical education in the schools of his native city and was a graduate of Harvard Medical School in the class of 1892, settling soon after in West Fitchburg. He was a member of the Worcester North District Medical Society.

Dr. Tully practiced in Fitchburg for over 38 years. He was stricken with a heart attack from which he died.

He was one of the best known members of the medical profession in this vicinity. He was a past president of the Worcester North Medical Society and senior member of the medical staff of Burbank Hospital.

He was interested in the affairs of the city and was elected a member of the school board in 1893. He followed the progress of education all his life and was always abreast of the latest and most approved educational and medical methods.

He was a member of Fitchburg Council, Knights

of Columbus, and the Holy Name Society connected with St. Bernard's Church as well as of the Worcester North District Medical Society. For many years he was physician for fraternal and benefit societies.

He is survived by his wife, Mrs. Mary (Ward) Tully; a daughter, Miss Ursula, a student at Cushing Academy; a son, Edward J. Tully of Southbridge; four sisters and a nephew.

The funeral was held Monday at St. Bernard's Church. Burial was in St. Patrick's Cemetery in Lowell.

TYRODE — DR. MAURICE PAUL OCTAVE VÉJUX TYRODE, formerly instructor in pharmacology at the Harvard Medical School, died at his home in Boston, June 4, 1930. He was born at Besançon, France, 51 years ago and came to America, when eight years of age, with his parents. His education was at the Boston schools, and at Harvard Medical School where he took an M.D. in 1900, graduating *cum laude* and winning the Dalton Fellowship at the Massachusetts General Hospital. He served as instructor in pharmacology at Harvard from 1902 to 1910 and then devoted himself to private practice in the department of internal medicine.

Dr. Tyrode was a brilliant linguist, speaking fluently five languages. He held membership in the Massachusetts Medical Society, the Audubon Society, the Traveler's Club and the American Medical Association.

HIPKISS—DR. GEORGE HIPKISS, of Stoneham, died at the Winchester Hospital June 2, 1930, at the age of 68. He was born in Birmingham, England, and came to this country when he was eight years old. He took an M.D. at the Hahnemann Medical College and Hospital of Philadelphia in 1886 and settled in Chattanooga, Tenn. In 1889 he joined the Massachusetts Medical Society and had a residence in South Boston. Subsequently he practised in many places in Massachusetts and in Connecticut, finally settling in Stoneham. During the war he was commissioned a major by the State of Connecticut and did service in a military hospital at Noroton. He was a member of the Connecticut State Medical Society and a Fellow of the American Medical Association.

Dr. Hipkiss is survived by his widow and one sister.

OBITUARY

JAMES HENRY DROHAN, M.D.

The son of Thomas and Agnes Moore Drohan, James H. Drohan was born in Brockton, Massachusetts, November 23, 1868 and died in the same city April 15, 1930. His father was a civil war veteran who had an enviable record having fought with Hooker at Chancellorsville, was wounded at Gettysburg and marched with Sherman from Chattanooga to Atlanta and the sea. James was educated in the grammar schools of Brockton and, as he was the son of a poor man with a large family, was obliged to work at an early age. Ambitious, however, he entered Holy Cross College in Worcester and spent two years in study. In 1909 the college conferred the degree of A.M. upon him. Graduating from Harvard Medical School in 1896 Dr. Drohan settled in Rockland, joined the Massachusetts Medical Society the following year and moved shortly to Brockton where he practiced the rest of his life. In 1925 he was president of the Plymouth District Medical Society and in 1926-1927 a councilor from that district.

He was married on June 19, 1901 to Margaret L. Saxton and was the father of seven children.

It is impossible to describe adequately a man of character for there is something which escapes definition. Dr. Drohan had that simplicity of manner which is born of true greatness; over and above all other characteristics was his kindness and his love for his fellow man. He inspired affection and almost veneration in his patients and friends who had the utmost confidence in his ability. The grandest thing, next to the radiance that flows from the Almighty's throne, is the light of a noble and beautiful life. Dr. Drohan lived to make the world about him better.

T. H. M.

NEWS ITEMS

DR. J. A. DUBINS TO STUDY ABROAD—Dr. Joseph A. Dubins has given up general practice of medicine in order to study Gastroenterology at leading clinics both here and in Europe.

A NEW SUPERINTENDENT OF McLEAN HOSPITAL—Dr. Kenneth J. Tillotson has been appointed to the position of Superintendent of McLean Hospital to fill the vacancy caused by the resignation of Dr. F. H. Packard last autumn.

Dr. Tillotson has been acting superintendent since the resignation of Dr. Packard and therefore is familiar with the routine and needs of the institution.

This hospital is a division of the Massachusetts General Hospital.

Dr. Tillotson was born in Warren, Vermont, April 21, 1898, secured his premedical education in that state and graduated from the University of Vermont Medical School in 1929. After graduation he served an interneship in the Mary Fletcher Hospital, Burlington, Vermont.

He is known as a lecturer on mental diseases and is a lieutenant in the Medical Officers Reserve Corps.

He is a fellow of the American Medical Association, Belmont Medical Club, Massachusetts Medical Society, New England Society of Psychiatrists and the Massachusetts Psychiatric Society.

NOTICES

ANNOUNCEMENT

Dr. Frederick H. Williams wishes to announce that his office at 7 Bay State Road can be reached by calling the old telephone number Kenmore 0423

or Commonwealth 5885. Owing to an error in printing the new telephone directory, this information was entirely omitted.

UNITED STATES CIVIL SERVICE EXAMINATION

The United States Civil Service Commission announces the following open competitive examination:

Senior Medical Technician (Pathology)

Applications for senior medical technician (pathology) must be on file with the Civil Service Commission at Washington, D. C., not later than July 9, 1930.

The examination is to fill vacancies in the Office of the Surgeon General, War Department, for duty in Washington, D. C., and in positions requiring similar qualifications.

The entrance salary is $2,000 a year. Higher-salaried positions are filled through promotion.

Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or from the Secretary of the United States Civil Service Board of Examiners at the post office or custom-house in any city.

ANNUAL NARCOTIC REGISTRATION RETURNS MUST BE FILED WITH THE COLLECTOR BY JULY 1 OR PENALTY ATTACHES

The forms to be used in applying for reregistry under the Harrison Narcotic Law, as amended, for the year beginning July 1, 1930 have been issued. These forms, properly executed, with the proper amount of tax or taxes, must be returned to the office, 22 Pearl Street, Boston, by Massachusetts doctors who need to use narcotic drugs, so that they will be received on or before July 1, 1930, or penalty will attach.

Persons registering in classes 1, 2, 3, or 4, are required to register in class 5 also if they wish to dispense or handle exempt narcotic preparations. No additional payment of tax is necessary, but care should be taken to see that the class 5 block on the application form is checked.

The inventory on Form 713 of narcotics on hand must be prepared under oath or affirmation, in duplicate, the *original* of which is to be kept on file by the maker and the *duplicate* forwarded to the Collector. No inventory is required for classes 1 and 2. AN INVENTORY MUST BE MADE FOR CLASS 5 WHERE REGISTRY IS TAKEN OUT IN THAT CLASS. The inventory for class 5 refers only to taxable narcotic drugs which might be set aside for use for manufacturing exempt preparations, and does not require the listing of ready-made preparations and remedies classed as exempt narcotic preparations. IN MOST INSTANCES NO TAXABLE NARCOTIC DRUGS ARE ON HAND IN CLASS 5. IF SUCH IS THE CASE, THE INVENTORY USED FOR REGISTRATION IN ONE OF THE HIGHER CLASSES MAY ALSO BE USED FOR CLASS 5, PROVIDED A NOTATION—"NO TAXABLE DRUGS IN CLASS 5"—IS PLACED CONSPICUOUSLY ON BOTH THE ORIGINAL AND DUPLICATE COPIES OF THE INVENTORY.

Please read the forms carefully before executing them, so that your registration may be properly accomplished, and to avoid payment of penalty, return all forms with proper remittance in the form of *certified check* or postal money order payable to the Collector of Internal Revenue, or cash, *not later than July 1, 1930.*

If there has been a change in address from that at which you registered last year, make note on application and give date of removal.

In the event that reregistration is not contemplated for any reason, this office should be so advised prior to July 1.

Returns should be addressed to

THOMAS W. WHITE,
Collector.

REPORT AND NOTICES OF MEETINGS

THE WACHUSETT MEDICAL IMPROVEMENT SOCIETY

The regular monthly meeting of the Wachusett Medical Improvement Society held June 4, 1930, at the Belmont Hospital, Worcester, Mass., proved to be one of the best that the members of the Society have had during their past activities for the year, 1929-1930.

The visitors were welcomed at the Hospital by the Superintendent, Dr. May Holmes, and members of the Staff.

An excellent supper was served, after which a business meeting was conducted.

Dr. Thayer, in charge of the annual outing of the Society, reported the work he had already done. Arrangements have been made with the Toy Town Tavern management, at Winchendon, Mass., and the date of the outing has been fixed for June 25.

A motion was made and seconded that Drs. Holmes, DeArmit and Getchell be admitted as members of the Society.

Another motion was also made and seconded that Drs. Holmes and DeArmit be our guests for the June twenty-fifth event.

Following the business meeting, Dr. Gordon Berry spoke of the activities of the National Society for the Hard of Hearing. His talk was highly interesting when he treated of the psychology of the deaf, and when he told his audience that the Audiometer is the only reliable instrument to detect slight hearing defects.

Dr. Armand L. Caron spoke of the work that is done locally for the hard of hearing children.

Discussion took place conducted by Dr. Lewis.

Dr. Davidson, formerly of Rutland, now on the consulting staff at Belmont, interested the members by showing a series of chest films.

Motion was made and seconded that a rising vote of thanks be given to the Superintendent, Dr. Holmes, for her generous hospitality.

PAUL DUFAULT, *Secretary-Treasurer.*

MEDICAL VETERANS' DINNER

The annual meeting and dinner of the Medical Veterans of the World War will take place Sunday evening, June 22, at 7:30 P. M., at the Italian Garden, Book-Cadillac Hotel, Detroit. The guest of honor will be Major General Merritte W. Ireland, Surgeon General, U. S. Army. The principal address will be given by Dr. Aristides Agramonte of the University of Havana, the only surviving member of the Walter Reed Yellow Fever Commission. There will be a short musical program. Members are asked to bring ladies. Reservations should be made through Dr. Burt R. Shurly, 62 Adams Avenue West, Detroit. Plates $2.50. Colonel John O. McReynolds, Aux. Res., the President of the Medical Veterans' Section of the Association of Military Surgeons, will preside.

CLINICAL CONGRESS OF THE AMERICAN COLLEGE OF SURGEONS

TWENTIETH ANNUAL SESSION, PHILADELPHIA, OCTOBER 13-17, 1930

Office of the Director-General,
40 East Erie St., Chicago.
May 23, 1930.

For the twentieth annual Clinical Congress of the American College of Surgeons, to be held in Philadelphia October 13-17, the surgeons of that city have planned a wonderfully interesting program of clinics. They are keenly interested to provide a complete showing of the clinical surgical activities of that great medical center. The program is comprehensive and varied—all branches of surgery will be represented therein. The schedule provides for clinics beginning at 2 o'clock on Monday afternoon and for the mornings and afternoons of the following four days. The preliminary clinical program will appear in the June issue of the official journal, *Surgery, Gynecology and Obstetrics*, and the June number of the *Bulletin* of the College.

The plans for this year's Congress include attractive programs for a series of five evening meetings beginning with the presidential meeting on Monday evening at which the president-elect, Dr. C. Jeff Miller, of New Orleans, will be inaugurated. The Murphy oration in surgery will be another feature of that evening's session. For the scientific sessions on Tuesday, Wednesday and Thursday evenings there will be orations and papers by eminent surgeons of the United States and Canada and distinguished visitors from abroad, dealing with various surgical subjects of present-day importance. The annual Convocation of the College will be held on Friday evening.

General headquarters for the Congress will be established at the Bellevue-Stratford Hotel where there are ample facilities for all of the Congress activities including rooms for the scientific sessions, hospital conferences, film exhibitions, and other meetings. There are now ample first-class hotel facilities in Philadelphia for all who will attend.

FRANKLIN H. MARTIN, *Director-General.*

NEW ENGLAND HOSPITAL FOR WOMEN AND CHILDREN

The regular clinical conference of the New England Hospital for Women and Children will be held at the Hospital, Dimock Street, Roxbury, on Thursday, June 19, at 8 P. M. Dr. Louise Eisenhardt will read her paper entitled "Rapid Diagnosis of Intracranial Tumors by Supravital Study".

Further conferences will be omitted until September.

ALICE H. BIGELOW, M.D., *Secretary.*

MASSACHUSETTS MEDICO-LEGAL SOCIETY

ANNUAL MEETING JUNE 17, 1930, AT 2:30 P. M.
Masonic Hall, Next to Memorial Hall,
Court Street, Plymouth

Program: Industrial Accidents.

"The Medical Viewpoint," Dr. Francis D. Donoghue, Medical Advisor of the Massachusetts Industrial Accident Board.

"The Legal Standpoint," Mr. Frank J. Donahue, formerly Commissioner of the Massachusetts Industrial Accident Board.

All physicians are welcome.

DR. W. H. WATTERS, *President.*
DR. MYRTELLE M. CANAVAN,
Secretary-Treasurer.

MENTAL HYGIENE INSTITUTE AT THE CONNECTICUT COLLEGE FOR WOMEN, NEW LONDON, CONNECTICUT, JUNE 30 TO JULY 19

The Division of Mental Hygiene
Connecticut State Department of Health
Stanley H. Osborn, M.D., C.P.H., Commissioner
Hartford, Connecticut

INFORMATION

This Institute is being held as a result of the great interest in Mental Hygiene shown in Connecticut, and the fact that many people have expressed their desire to obtain a more thorough knowledge of the subject than can be obtained in one or two lectures. Also, many social organizations have expressed a need for workers with more insight into the application of the principles of Mental Hygiene, and it is planned that this Institute will help to solve these problems.

During the three weeks' course sixty-five lectures and seminars will be given.

Coöperating Agencies

Realizing that attendance at lectures is likely to be irksome in the summer time, arrangements have been made to hold this Institute at New London which is well known as a summer resort, and at the Connecticut College for Women, which has an ideal campus for this purpose. This has been made possible by the invitation of Katherine Blunt, Ph.D., President of the College, and the coöperation of members of her staff.

Director of the Institute

James L. McCartney, M.D., Chief, Division of Mental Hygiene, State Department of Health.

Curriculum Committee

Roy L. Leak, M.D., Lloyd J. Thompson, M.D., Hester B. Crutcher, M.S.S., Frank E. Morris, Ph.D., Effie Taylor, R.N.

CONNECTICUT COLLEGE FOR WOMEN

Connecticut College for Women, chartered in 1911 by the State of Connecticut, located in New London, Connecticut, is a liberal college of arts and sciences for the higher education of women. New London with a population of 33,394 persons, is on the Shore Line of the New York, New Haven and Hartford Railroad, one hundred and six miles from Boston, and one hundred and twenty-three miles from New York. It has direct communication by motor coach with Hartford, Connecticut, and Springfield, Massachusetts, and by rail via Saybrook Junction. It is the terminus of the Central Vermont Steamship Company, and of various motor coach and trolley lines.

The buildings where the Institute will be held, may be reached from the railroad station by the Norwich trolley, stopping at the College entrance, a ten minute ride.

Requirements for Admission

Satisfactory participation in the training program of the Mental Hygiene Institute calls for a degree of mental maturity, manifesting itself in adequate study methods, a lively interest in professional equipment and some knowledge of the subject matter of the social sciences. In order to bring together an educationally homogeneous group, the admission requirements are:

(1) A degree from a college of recognized standard, or,

(2) A minimum of one of the following:
  (a) Two years of social work in an agency of satisfactory standard
  (b) The completion of a nurse's training course
  (c) Teaching or other social professions which are allied to the social work field.

Method of Admission

Candidates for admission are required to file an application on a form supplied by the Division of Mental Hygiene, State Department of Health. The decision of the Committee on Admission is based on satisfactory credentials as to educational preparations, as outlined above, physical and mental health, adequate to the strenuous demands of the work required.

An interview with a member of the Division of Mental Hygiene is strongly urged when feasible. In the interest of assembling adequate data concerning candidates, it is desirable that application be made one month prior to the time set for the Institute.

Courses

The courses are planned in the following form:

(a) Lectures and seminars designed to acquaint the students with the special problems of representative fields of social work.

(b) Lectures in which the subject matter of related sciences has been specifically adapted to the needs of those who come in contact with behavior problems and personality difficulties.

(c) Lectures providing opportunity for combining in discussion certain technical factual and philosophical phases of the field of psychiatric social work and their effective correlation in practice; e.g., Psychiatric Social Work and Social Philosophy, The Family, The School, Public Health Nursing, etc.

Field Work

Following full attendance and fulfilment of the other requirements of the Institute, Field Work will be provided if possible in social agencies carrying substantial programs in social work. An effort will be made to secure for the student a sequence of experiences under supervision, organized for its educational value to the student.

Certificate Attendance

A certificate will be given to all those attending the full course of curriculum lectures, 60 hours.

ORGANIZATION OF INSTITUTE COURSES

Lectures or discussions—4 hours per day (Saturdays 3 hours) first two weeks.

Small discussion groups with alternate student leaders meet for one hour each day (lunch, evening or other time as arranged by them).

Seminars or discussion and practice groups under faculty leaders, last week of course. Informal discussion groups under student leaders may be continued in third week. Six popular evening lectures by outside authorities on special subjects, and not included in the curriculum.

Visits to State Institutions (State Hospitals, Niantic, Long Lane Farm, etc.) on Saturday afternoons.

Private Conference and Personal Health

Opportunity will be offered for those attending the Institute to make special appointments for private consultation with the faculty members concerning their personal problems. An attempt will thus be made to help these persons to a desired adjustment.

A physician will be on call during the Institute for general physical care.

COURSES AND SUBJECTS

I. Fundamental Principles of Human Nature, Normal and Deviating

Section

A. Introduction. Broad point of view of human behavior—1 hour—McCartney.

B. Biological background of human behavior. Heredity (Pavlov-Cannon), Levels of adjustment, etc.—1 hour.
C. Instincts and Emotions. Conflicts and need for adjustment to Society—1 hour.
D. Emotional Development. Sex—2 hours.
E. Conscious and Unconscious. Other psychoanalytic Theories—2 hours.
F. Mental Mechanisms (through varying degrees). Projection, Identification, Rationalization, etc. —2 hours—B-F given by Thompson and McCartney.
G. Rôle of Intelligence. Superior and Inferior. Special abilities and disabilities (Orton). Psychometrics and their meaning—2 hours—Morris.
H. Psychoneuroses—1 hour—Thompson.
I. Delinquency and criminology (psychopathic personalities) — 1 hour — Lindsay. The Pauper, Prostitute, Alcoholic (Sex Deviation)—1 hour —McCartney.
J. The Psychoses—1 hour—Waterman.

II. Mental Hygiene Approach to Social Service Work

A. Review of Fundamentals of social work—1 hour —Thacher.
B. Field of psychiatric social work—1 hour—Mitchell.
C. Philosophy of psychiatric social work and community philosophy—1 hour—Matthews.
D. Theory and practice of psychiatric social work. General principles. History taking and recording and case study. Treatment rôle and methods—12 hours—Crutcher, Roberts, Moffette, Mitchell, Chase, Ralph, Bliss, Camp, Tomlinson, Thacher, Rannells.

III. Applied Principles of Mental Hygiene

A. Mental Hygiene of Infancy and Early Childhood. Fundamental Habits. Eating. Sleeping, etc. Applied to later problems. How they are formed. How child learns. Treatment. Foundations of later character traits. Imitations. Attachments, etc. Parental Love. Parent-Child relation—3 hours—Tiebout.
B. Later Childhood and Adolescence.
Social Adjustment. Establishment of adult sexuality, etc.—1 hour—Tiebout. Rôle of Home and School. Emancipation. Place of Child in Family—1 hour—Wells.
C. Adult and Social Problems.
Marriage and Sex Adjustment. Parenthood. General family. Vocation. Social Adjustment—2 hours—McCartney.
D. Everyday Problems of the Everyday Person—1 hour—Radamacher.
E. General Social Problems. Applied Sociology—2 hours—Arrington.
F. Mental Hygiene and the School.
The Psychiatric Social Worker and the Visiting Teacher—1 hour—Baldwin.
Social Problems in the work of the Visiting Nurse—1 hour—Roberts.
G. Mental Hygiene in Industry—1 hour—Elkind.
H. Mental Hygiene Problems and Resources for Meeting Them. The Laws—1 hour— McCartney. Methods of committing a patient. State Institutions—1 hour—Leak.

IV. Community Problems

A. Methods of Community Organization—2 hours—Stevenson.
B. Administration of Social Agencies—2 hours—Hadley.
C. Social Surveys and Community Studies—1 hour —Hamilton.
D. Publicity Methods in Social Work—1 hour—Nickerson.
H. Leisure Time Problems—1 hour—Cutten.
I. Dependent Children—2 hours—Messenger.
J. Vocational Guidance and After-Care—1 hour—Burr.
K. State-Wide Views of Child Welfare—1 hour—Messenger.

Special Seminars—Those taking part will be the directors of all Institutions in Connecticut and especially those listed in the Faculty who have promised to be present on July 18.

Evening Lectures—8:15 P. M.

1. June 30—Clifford W. Beers.
2. July 3—F. L. Wells, Ph.D.
3. July 7—J. A. Tinsley.
4. July 11—Augusta F. Bronner, Ph.D.
5. July 15—George B. Cutten, Ph.D.
6. July 17—Marion E. Kenworthy, M.D.

SUGGESTIONS FOR DISCUSSION GROUPS

(First Two Weeks Under Student Leaders)

Topics may be derived from the application of lecture or reading material. Definite topics may have to be assigned although group and leader should take initiative when possible. Records of what is discussed and views expressed or decided upon should be kept for a future check-up with faculty members in seminar or other times.

Seminars

Faculty member with group will alternate according to topic discussed and general needs of group.

General Notes

Definite assigned reading of books, chapters or articles with added suggested reading.

Practical work, quizzes, book reviews, and themes may be used.

Lectures not over 50 minutes with 10 minutes for discussion, oral questions, questions written by the students or practical examples and problems.

Seminar Groups

If sufficient persons register for the seminars, the group will be divided as follows:

A. Social Service Workers
(a) General

(b) Special, Family, Children, etc.

B. Nurses
   (a) Visiting Nurse Association
   (b) Industrial
   (c) School

C. Teachers
   (a) Grade School Teachers
   (b) Visiting Teachers
   (c) Others, Kindergarten, Special Class, High School, etc.

D. Probation or Parole Officers

E. Parents
   (a) Parent-Teacher Association
   (b) Study Groups

F. Physicians

SOCIETY MEETINGS, CONGRESSES AND CONFERENCES

March-October — International Medical Postgraduate Courses in Berlin. Complete notice appears on page 853, issue of October 24, 1929.

June 17—Massachusetts Medico-Legal Society. Complete notice appears on page 1175.

June 19—New England Hospital for Women and Children. Complete notice appears on page 1175.

June 22—Medical Veterans' Dinner. Complete notice appears on page 1175.

June 22-24—Thirty-first annual session of the American Proctologic Society. Complete notice appears on page 1028, issue of May 22.

June 23-27—Annual meeting of the A. M. A. Auxiliary. Detailed notice appears on page 981, issue of May 15.

June 23-July 12—The Fourth Public Health Institute. Complete notice appears on page 839, issue of April 24.

June 24—American Heart Association, Inc. Detailed notice appears on page 934, issue of May 8.

June 30-July 19—Mental Hygiene Institute. Complete notice appears on page 1175.

July 10-12—The American Association for the Study of Goiter. Complete notice appears on page 935, issue of May 8.

September 4-8—Fifth International Congress on Physiotherapy. Complete notice appears on page 906, issue of October 31, 1929.

September 8-12—Postgraduate week of Physical Therapy. Detailed notice appears on page 1025, issue of May 22.

September 26-27—New England Surgical Society. Detailed notice appears on page 1028, issue of May 22.

October 13-17—Clinical Congress of the American College of Surgeons. Complete notice appears on page 1175.

October 27—The American Public Health Association. Detailed notice appears on page 1271, issue of December 19, 1929.

March 23-27, 1931 — Fifteenth annual clinical session of the American College of Physicians. Detailed notice appears on page 790, issue of April 17.

BOOK REVIEWS

The Surgery of the Brain and its Membranes. By Prof. Dr. Egon Ranzi, Innsbruck. From Vol. III, pp. 387-548 of Kirschner and Nordmann's Surgery.

This monograph by Ranzi is divided into three main headings. A. Injuries of the brain and its membranes. B. Diseases of the brain and its membranes. C. Technique of cranial operations.

Under A there are again three subdivisions in which are considered simple injuries, compound injuries and injuries to the intracranial blood vessels. Under simple injuries he discusses the usual signs and symptoms of concussion, compression and contusion of the brain, taking up the use of hypertonic salt solution and lumbar puncture in those cases with sufficient evidence of increased intracranial pressure to demand therapeutic measures of this sort. When there are localized evidences of brain damage, operation may be indicated. The section on compound injuries, as might be expected, is devoted largely to gunshot wounds. Here he takes up the method of debridement and wound cleansing which was developed during the late war. It is to be noted that he advocates palpation and removal of bone fragments within the brain by the finger as well as by washing out with saline solution. After debridement he advocates covering the open wound with gauze or leaving it partially open with drainage. He notes that others, notably Guleke, advocate closing of the wound if operation has taken place 6-12 hours after the injury has been received. As to metallic foreign bodies the author is inclined to remove them when possible if they are superficial. Those which are deeply situated should be left alone unless symptoms arise which would indicate that they are the source of an abscess. In these deep fragments an electro-magnet for extraction may be used at times with success.

With regard to injuries of intracranial blood vessels the author takes up first extra-dural bleeding, i.e., a meningeal hemorrhage. He discusses the usual well-recognized syndrome, but points out that the "free interval" may be lacking. Quoting from Custodis he says this feature was not present in 36 out of 100 cases. He emphasizes the importance of a slowed pulse and Cheyne-Stokes respiration. The treatment of a meningeal hemorrhage is by operation. Either a bone-flap or decompression is performed and the artery tied off by transfixion of the dura with a stitch. If the artery is torn at the base near the foramen spinosum, the latter may be plugged with bone wax or with a sharpened piece of wood. Some cases, he says, need ligation of the external carotid. The statistics which he has compiled show usually about 66 2/3% of recoveries.

Another type of intracranial bleeding is that which occurs from a dural sinus. This is sometimes started by removal of a bone fragment in a fracture. In this case he advocates laying the sinus bare and stopping the bleeding by pressure of gauze or muscle (Horsley). Sometimes it is necessary to ligate a sinus, but one should never use clamps in this process, as tearing will occur and the hemorrhage made worse.

The third type of intracranial hemorrhage is that which occurs in the formation of subdural hematomata. In these cases he says the "free interval" may be anything from several hours to as long as ten months, but according to Henschen is lacking in twenty-seven per cent. of patients. The author advocates brain puncture as the most important diagnostic procedure. The hematoma should be removed after turning down a bone flap. If the source of bleeding cannot be found or stopped, packing with gauze for one or two days may be necessary. Ruptured intracranial aneurysms are usually fatal but the author quotes Foerster as saying that two out of eleven were cured by packing with gauze.

The second main subdivision of the monograph, B, is devoted to diseases of the brain, in which are included inflammations, such as meningitis, encephalitis, brain abscess and sinus thrombosis, and also brain tumors, hydrocephalus and epilepsy. Concerning purulent meningitis the author states that sur-

gical therapy depends upon early diagnosis and operation. For meningitis developing from an otitic focus local drainage is advised. For generalized meningitis in addition to lumbar punctures, drainage of the cisterna magna is especially emphasized, although he points out that some authorities prefer drainage of the lumbar subarachnoid space or of the lateral ventricle. Medicinal therapy includes the use of urotropin by mouth and by vein, and the injection of polyvalent sera.

Serous meningitis may occur either in the generalized or the localized form. For the former lumbar punctures and especially a Balkenstich (third ventricle puncture) are advised, while for the latter evacuation of the cystic-like area by operation is indicated.

The subject of brain abscess is taken up under several classifications, such as the etiological organism, the situation (cortical or subcortical) and the acute or chronic varieties. Etiological factors include otitic, pyemic, traumatic and encephalitic foci as well as septic processes in the nose, throat and sinuses. The operative aim should be to open the abscess as widely as possible and establish effective drainage. Lumbar puncture as a systematic measure is useful in reducing intracranial pressure and in causing cerebral fungi to subside. The prognosis in late abscesses, i.e., those which develop after a long latent period from the time of the original infection,—is poor.

Little is said regarding the treatment of sinus thrombosis, as this properly falls into the section on diseases of the ear, nose and throat. The author does give a method of exposing the cavernous sinus, however, by an approach in which the Gasserian ganglion is turned upward, the sinus being brought into view by this maneuver.

Considerable space is devoted to the subject of brain tumors, which in a broad sense include all growth-like formations within the skull. The author first takes up the diagnosis, dwelling at length upon the general and localizing symptoms, giving several reports of illustrative cases. He also gives some of the characteristic findings in special varieties of tumors in different localities, such as meningiomas, gliomas, blood-vessel tumors, metastatic tumors and especially of tumors in the cerebellum as well as the cerebello-pontile angle. In taking up therapy he mentions the apparent good effect of x-ray treatment in certain types of growth but adds, however, that this may be due to the effect of the rays upon the choroid plexus, by which the output of cerebrospinal fluid may be lessened. The chief treatment of brain tumors is of course by operation, and the aim of the surgeon is always to localize and remove the tumor if possible, undertaking a palliative operation only when every means for localization has failed. After a palliative operation the patient should be followed carefully to see if localizing symptoms appear, in which case a radical exploration may be performed. Some of the mortality statistics from brain tumor operations in European clinics and in one American clinic are quoted. The older German statistics of about 1911 (Krause, Küttner, Dedekind) give a general mortality of 30-36%. In von Eiselsberg's clinic (1921) the general mortality was 40%, while Magnus (1926) reported 13½%, and Olivecrona (1927) about 40%. Guleke (1926) reported 24.6% and Cushing (1917) 12.5%, but later (1925) 8.4%. For palliative operations von Eiselsberg's mortality figure is 26%. It is of course well known that the size and variety of tumor is of great importance so far as the danger of operation is concerned. The mortality in cerebellar tumors is much higher than in those above the tentorium. For acoustic tumors the mortality in several European clinics is from 56-84%. Shock is given as the greatest factor in the mortality from operations upon brain tumors. Other factors are (1) capillary hemorrhage into the medulla in cerebellar cases. This can often be prevented by tapping the ventricle before the tumor is attacked; (2) misplaced operations; (3) upset of the respiratory centre; (4) infection; (5) fungus cerebri. The late end results depend upon the nature of the growth.

The remaining portion of this chapter is taken up with a consideration of hydrocephalus and epilepsy. Concerning the former, the author takes up the different types and their causes, quoting especially the work of Blackfan and Dandy. He speaks also of the diagnostic value of ventriculography and encephalography in these cases, procedures which were first devised and carried out by Dandy in 1918. Likewise the method of lipiodol injection into the cerebrospinal fluid spaces as advocated by Sicard and Forestier is discussed, and illustrations given of its use. As to the surgical treatment of hydrocephalus little can be said. Ventricular punctures give but temporary relief as a rule, and other forms of attempted drainage, such as from the spinal subarachnoid space into the abdomen are unsatisfactory. Extirpation of the choroid (Dandy) has been accomplished at times with success, and in some cases radiation of the plexus has also apparently been of benefit.

The subject of epilepsy is considered entirely from its surgical aspects. When convulsions are caused by tumor, abscess, tubercle, cysts, etc., these definite lesions of course must be attacked. The principal discussion in this section, however, concerns itself with traumatic epilepsy and more particularly with cases which have followed gunshot wounds. He quotes Steinthal whose figures showed an incidence of 28.9% of cases having seizures following this type of injury. Operation is indicated if the convulsions become frequent. The aim of the operation should be to excise the scar tissue which is adherent to the underlying brain all around the bony defect as far as the free subarachnoid space. The resulting dural defect may be covered with a fascial transplant, although the author prefers fat. He states that according to Fischer about a third of the cases thus operated upon are probably successful, but judgment is difficult because seizures may again develop after a long period of time.

The third and last main subdivision, C, is given over to the technique of intracranial operations. In the first part of this section there is a consideration

of general measures, such as preparation of the patient, control of bleeding, anaesthesia, and methods of preventing the fall of blood pressure which accompanies opening of the skull. The consensus of opinion now favors a one-stage operation, if possible, and for anaesthesia a 0.5% novocain-adrenalin solution. Under certain conditions ether may be necessary.

The second part of the chapter on technique is concerned with the various types of procedure used in opening the skull, such as osteoplastic flaps, explorations of the posterior fossa, and decompressive operations. Various technical methods for outlining flaps and cutting the bone are illustrated. It should be noted that his illustration of Cushing's subtemporal decompression does not represent the type of operation used for this purpose in recent years. Likewise the illustration of the Cushing table used in cerebellar operations is incorrect as to several features. The chapter closes with a description of the technique for cisternal puncture (after Ayer), and for the operation of third ventricle puncture (Balkenstich). A voluminous and very representative bibliography is appended.

Surgical Clinics of North America. Chicago number. Volume 10, number 2. April, 1930. $12.00 per clinic year. W. B. Saunders Company, Philadelphia.

This issue opens with a very interesting clinic by Bevan. In operating for *gallstone disease* he uses an S shaped incision and splits the rectus near its inner third. He removes the gall bladder from above downward. There is an excellent discussion of *congenital pyloric stenosis* for which he does the Rammstedt type of operation under local anaesthesia through a high incision thus minimizing any tendency to evisceration. He also reports a case of acute *appendicitis* with a secondary abscess in the scar due to a fecal stone. He next gives a well illustrated detailed description of his operation for *undescended testes.* One refinement of technic is the injection of normal salt solution to lift the vaginal process from the cord and thus facilitate its dissection. In a bilateral case he prefers to operate upon each side separately because of the risk of overdistention of the scrotum and oedema. In considering the operation for *carcinoma of the breast* he emphasizes the importance of making the site of the tumor the center of the excised area rather than following a classical incision.

Kellogg Speed reports a case of *tumor of the chest wall,* a fibrosarcoma, growing between the ribs and into the liver for which he removed part of the rectus abdominis, five ribs, part of the diaphragm and a large part of the right lobe of the liver. The cut edge of the diaphragm was sutured to the transversalis fascia, sheath of the rectus, and subcutaneous tissue. A relatively uneventful recovery was made and this patient is shown in good health six years after operation. He presents several cases of *small joint infections* with good results from surgical treatment.

Bailey and Bucy demonstrate a group of cases with *tumors of the spinal canal.* These give much better results than do most cases of brain tumor, since they rarely involve the cord itself and function is usually regained even after prolonged compression.

Carl B. Davis advocates the use of the *Pauchet closure* of a colostomy after excision of the sigmoid rather than the conventional Mikulicz clamp method. The distinctive feature consists in cutting the septum between the loops of the colostomy and suturing the edges with continuous linen sutures. In managing cases of *duodenal fistula* the use of hourly doses of alkali has been very helpful.

McWhorter discusses the *operative treatment of hypospadias* and shows a difficult case in which a good result was obtained. He also reports three cases of *thrombo-angiitis obliterans* in which ligation of the femoral artery and vein was done with some benefit. Other methods of treatment are discussed.

Christopher presents several interesting cases the first being one of ulcerative colitis which developed an *ulcerative arteritis.* In a case of *fracture of the second cervical vertebra* he applied a plaster cast after suspending the patient from a Balkan frame over her bed. Another patient with *pelvic inflammatory disease* developed *necrosis of the ileum* requiring resection of about ten inches. *Repair of the hepatic duct* is illustrated by a patient whose common duct was wounded surgically. Repair of the common duct over a rubber tube was followed by secondary stenosis requiring further operation. The hepatic duct was then anastomosed to the duodenum over a catheter the split ends of which passed into the hepatic ducts. A good result was obtained. In a case of *cervical fistula, paraffin injection* was used to facilitate the excision.

Bettman presents a clinic on *Meckel's diverticulum* including one case that had a volvulus.

Agranulosis and its surgical aspect is discussed by Hueper and Garrison. The most striking feature is a marked leukopenia. There is usually an extensive throat and mouth infection and occasionally changes in most of the organs of the body. The fulminating type is rapidly fatal.

There are several other interesting and instructive clinics continuing the varied list of subjects to make this a truly valuable volume.

University of Iowa Studies in Medicine. Volume III, part 2. Published by the University, Iowa City, Iowa. 1928.

This volume of collective reprints covers a wide range of subjects. The valuable studies of Orton in stuttering are continued. There are several useful articles on undulant fever. The remainder of reprints cover a wide range of subjects.

Studies from the Rockefeller Institute for Medical Research. Reprints. Volume 70. 1930.

This volume of reprints from the Rockefeller Institute Hospital covers the usual wide range of subjects. Further studies on the pneumococcus and the streptococcus are presented, together with a large number of contributions in the field of organic and physical chemistry.